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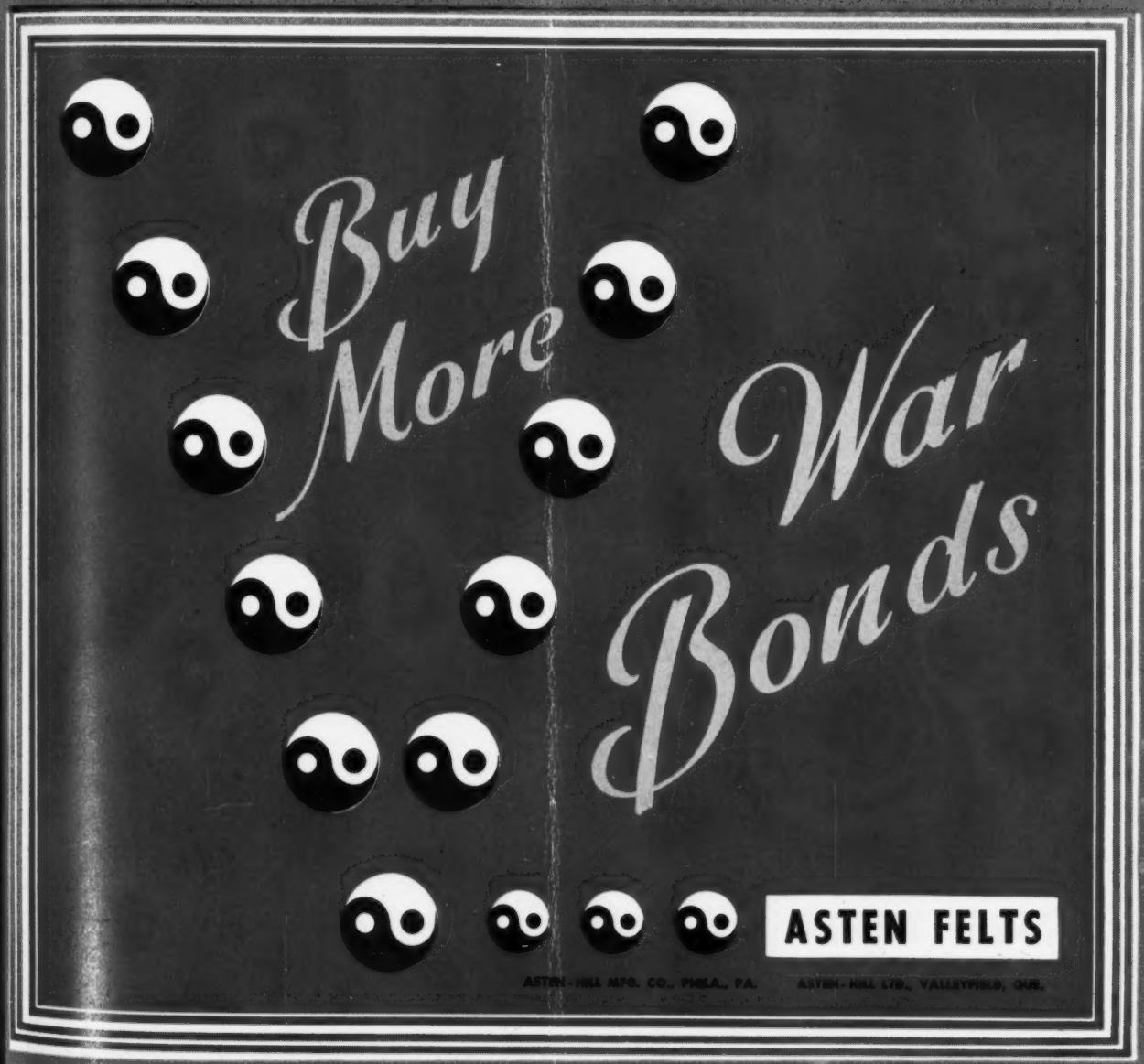
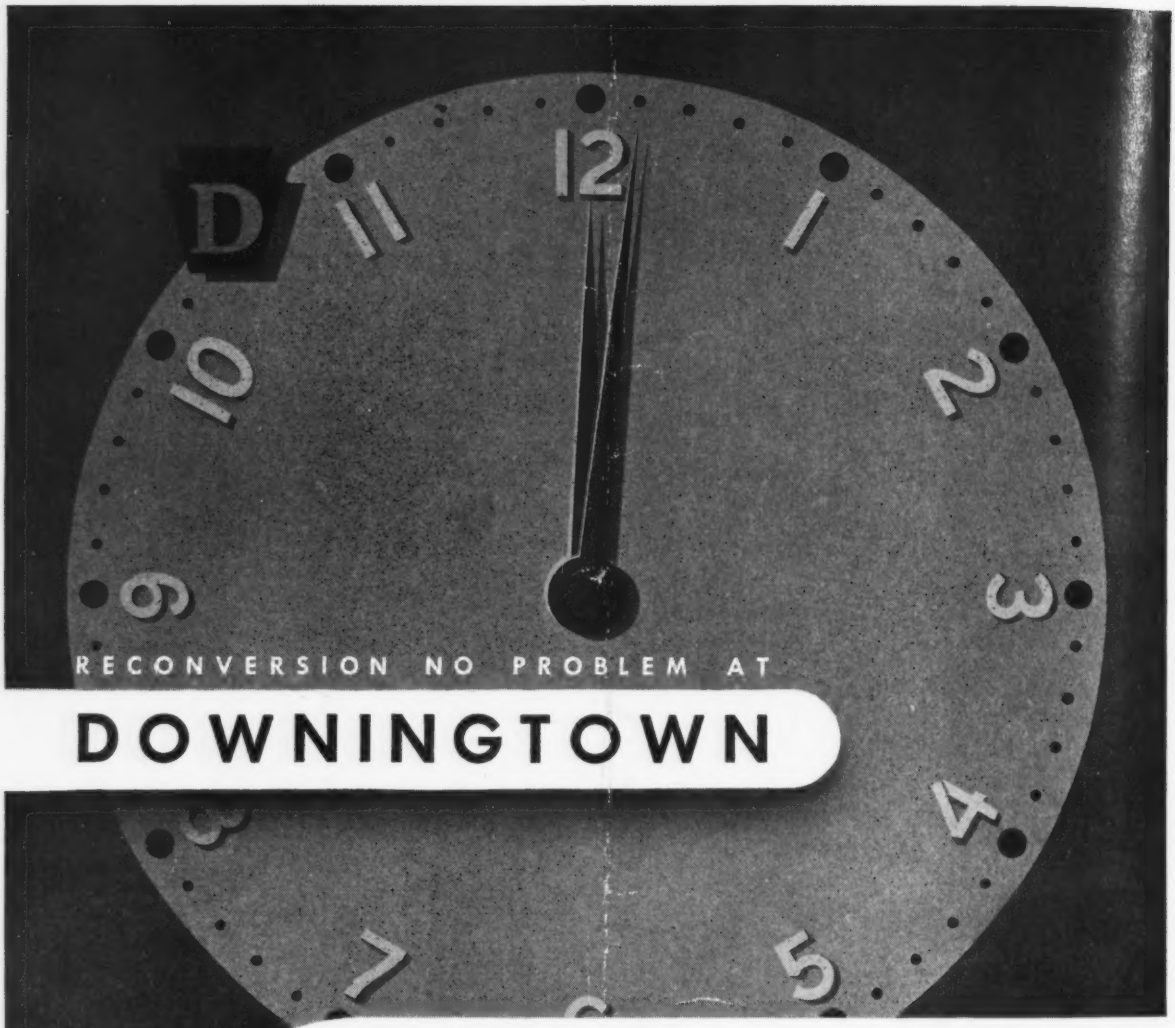
PAPER TRADE JOURNAL

APRIL 6, 1944





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NEXT MINUTE · *Paper Mill Machinery*

Reconversion is no problem with us; it's simply a matter of issuing orders and blueprints to our Pattern Shop, Foundry, Machine Shop, etc. Of course, we've added many new, modern, precision-production machine tools and other equipment to increase our war machinery output, BUT everything we've added will remain to help us build even better paper mill machinery. We can be ready to start manufacturing your new or replacement machinery needs in a minute after our government permits us to do so. But we can't start manufacturing until designs and specifications are determined. The sooner you consult our engineers, the sooner you place your order—then, the sooner you'll get your machinery. . . . The Downingtown Manufacturing Company, Downingtown, Pa.

PAPER TRADE JOURNAL

Established 1872

Title Reg. U. S. Pat. Off.

Volume 118 Number 14

Published every Thursday by Lockwood Trade Journal Co., Inc.

Executive and Editorial Offices: 15 W. 47th St., New York 19, N. Y.

New York, United States of America

BRyant 9-0860

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Subscriptions
(Payable in advance)

By the year $4.00
Single Copy ..... 10 cents

Postage Extra:
To Canada $2.00
To Other Foreign Countries $3.50

Member Audit Bureau of Circulations

PAPER *established Feb 17, 1899, combined with* PAPER TRADE JOURNAL *Nov. 16, 1899.* PAPER *established Sept. 21, 1910, combined with* PAPER TRADE JOURNAL, *Feb. 19, 1925.*

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PAPER TRADE JOURNAL *is entered as Second Class matter at the Post Office at East Stroudsburg, Pa., under Act of Congress of March 3, 1879. Publication Office of Lockwood Trade Journal Co., Inc., 34 N. Crystal St., East Stroudsburg, Pa. Printed in U. S. A.*

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CONTENTS

APRIL 6, 1944

	PAGE
Allocate Wood Pulp for Second Quarter	7
R. F. Nelson Heads Glassine Co.	7
Hubbs & Howe Announces Changes	7
Paper Board Supply Considered More Acute	8
Hold War Time Conference	8
Kenneth Trowbridge Goes with WPB	8
Arthur G. Wakeman Resigns	8
Raw Material Situation Improves	8
Amro Paper Co. Plant to be Sold	8
Institute Confers Degree Upon Dr. Purves	10
Thilmany Club Elects Officers	12
Financial News	12
C. W. Boyce Resigns From WPB	12
Downingtown Elects Officers	12
Consolidated Earns $1,294,228	12
Save and Serve	16
Paper Shipments Higher	16
Three-Dimensional Seeing	17
Scientific Inspection	17
Joins Diamond Alkali	17
Editorial	20
Coming Events in Paper Industry	20
Post-War Employment	20
Butterworth Plans Reorganization	21
Production Ratio Report	21
Paperboard Operating Ratios	21
Introduces Waste Paper Resolution	34
Latest Market Review	34
Miscellaneous Markets	36
Market Quotations	36
Classified Advertising	44

Technical Section *("TAPPI")*

Printing Characteristics of Bleached Groundwood Paper	23
The Wood Pulp Situation	24
Dirt in Wood Chips	27
Your Waste Paper Situation	30
The Chemistry of Cellulose	32
Chemistry of Synthetic Substances	32

PAPER TRADE JOURNAL IS INDEXED IN INDUSTRIAL ARTS INDEX

INDEX TO ADVERTISERS ON PAGE 50

Another War Job for CAMACHINE 18

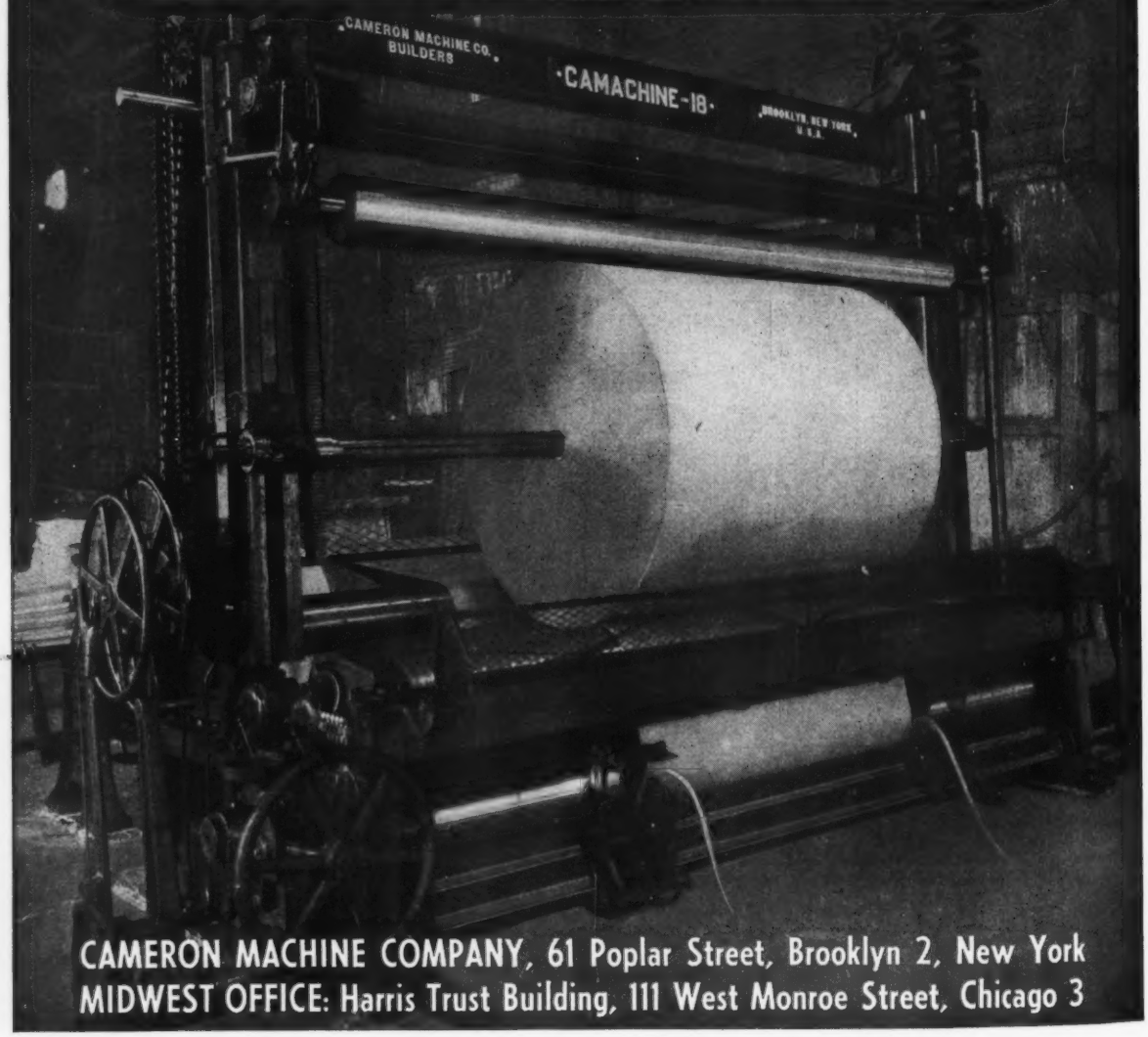
Fleming & Sons, Inc. operate a huge paper manufacturing plant at Dallas, Texas, which is the largest of its kind in the Southwest.

This firm is now celebrating its fiftieth anniversary, and is equipped with the finest and most modern equipment available, including a 116" wide CAMACHINE 18 of 60" rewind capacity.

Weekly production at this plant is more than 2,000 tons. Hundreds of thousands of rolls of Fleming paper are today going to war uses, packaging food shipments, ammunition, medicines, blood plasma, also gun and replacement parts.

The CAMACHINE 18 illustrated below at this plant was "clocked" a short time ago, winding 25 point chipboard into 40" diameter rolls. It took exactly four minutes. The rolls produced, moreover, were firm, evenly wound and of uniform density from core to circumference, that is to say, rolls with excellent shipping qualities and of a character ideally suited to subsequent processing.

It would seem to be none too early to start planning now to replace your old Winder with a new one. Should priority restrictions be eased suddenly, you would then have the facts on hand to permit you to proceed at once. We, of course, are ready to furnish the answer to any slitting or roll winding problem you may be up against. Just write us giving particulars as to your needs.



CAMERON MACHINE COMPANY, 61 Poplar Street, Brooklyn 2, New York
MIDWEST OFFICE: Harris Trust Building, 111 West Monroe Street, Chicago 3

PAPER TRADE JOURNAL
Title Reg. U. S. Pat. Off.

Vol. 118, No. 14 Thursday, April 6, 1944 Price Ten Cents

Allocate Wood Pulp For Second Quarter

To Make 4,335,353 Tons of Paper and Paper Board According To Harold Boeschenstein, Director, Forest Products Bureau of the War Production Board From 2,656,539 Tons of Wood Pulp Available.

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., April 5, 1944 — A total of 4,335,353 tons of paper and paper board will be manufactured during the second quarter of 1944, Harold Boeschenstein, Director of the Forest Products Bureau, War Production Board, said today in announcing the allocations of wood pulp.

Allocations of wood pulp putting into effect the program determination of the WPB Requirements Committee for the second quarter were mailed to mills this week.

The Production Program

Under this program, the minimum quantity of paper and paper board to be produced in the United States in each general category from 2,656,539 tons of wood pulp allocated for this purpose will be as follows:

Grades of Paper and Paper Board	Minimum Production (in short tons)	
Newsprint	180,000	
Book and Groundwood printing, Business and Converting Papers	478,548	
Fine Paper	222,534	
Coarse Paper	480,818	
Multi-Wall	91,434	
Special Industrial	63,246	
Sanitary Paper	206,897	
Tissue Paper	36,273	
Absorbent Paper	23,819	
Building Paper	243,949	
Total Paper Grades		2,027,518
Container Board	1,110,498	
Folding Boxboard	507,555	
Setup Boxboard	189,315	
Cardboard	15,471	
Building Board	289,342	
Miscellaneous Paper Board	195,654	
Total Paper Board Grades		2,307,835
Grand Total Paper and Paper Board		4,335,353

Preferred Status to Certain Types

At the direction of the Requirements Committee, the Forest Products Bureau will take steps to give preferred production status to certain types of paper and paper board in order to insure that in any circumstances all war and essential civilian requirements will be satisfied. It is anticipated that these types of paper and paper board will be given preferred production status through the issuance of a direction under General Preference Order M-93 which will be sent by War Production Board to all producers and consumers of wood pulp.

For the first quarter, the WPB program determination provided a total of 2,511,180 tons of pulp for the manufacture of a minimum of 4,196,511 tons of paper and paper board.

R. F. Nelson Heads Glassine Co.

As of April 1, 1944 Robert F. Nelson of Bryn Mawr, Pa. became the president of the Glassine Paper Company with paper mills located at West Conshohocken, and Manayunk, Philadelphia, Pa.

Mr. Nelson, who is a graduate of the United States Naval Academy, has been associated with the Glassine Paper Company since March 1925. He is well known in the paper industry and has been active in the American Paper and Pulp Association, the Glassine and Greaseproof Manufacturers' Association and, of late, has been on various advisory committees of the War Production Board and the Office of Price Administration.

George T. Fritz of Haverford, Pa. becomes Vice President and Treasurer and Miss Gladys Burrows of Norristown, Pennsylvania becomes Secretary.

Hubbs & Howe Announce Changes

Donald F. Vaughan, formerly sales representative in the Erie territory, has been promoted to an executive position in the Cleveland office of Hubbs & Howe Company. Mr. Vaughan was for several years a star salesman for the Buffalo Division of Hubbs & Howe Company, and is widely known in the Erie vicinity.

C. B. Lage has been appointed his successor in the Erie region. Mr. Lage, formerly with Orchard Paper Company, has a wealth of paper experience, gained from years of contacts with mills and jobbers. At presesnt, his office is located at 717 Commerce Building, 12th & State streets, Erie, Pa.

Paper Board Supply Considered More Acute

Packaging Experts At Conference Expect Little Relief From Container Board Shortage In Next Few Months — Panel Discussion Sponsored By Professional Paper Group Takes Part In Meeting.

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., April 3, 1944—Little or no improvement in critical packaging materials may be expected in the next few months and some shortages of container materials such as paper board may possibly be a limiting factor in production and distribution. This is the consensus of opinion of packaging engineers and WPB officials expressed during a panel discussion at the American Management Association's annual Packaging Conference held this week in the Palmer House. W. L. Davis, assistant director of WPB's paperboard division, reported that the weatherproof "V-Box" developed for army uses, consumes four times as much paper board as the common domestix box and that the drain on virgin kraft pulp, with imports from Scandanavia cut off, has become serious. He stated that manpower shortages were also seriously affecting the pulp supply.

WPB Executive Gives Warning

The WPB executive warned that paper board and its converted products will not be adequate to supply requirements under present methods of use but he felt that if American industry and the public do away with the unnecessary use of these products "there will be unquestionably enough left to take care of the requirements of our armed forces and also our domestic economy needs."

Mr. Davis warned that every box user will have to get along on the "barest possible minimum if the supply is to be stretched to cover essential domestic needs." Recovery of paperboard, he indicated, would have to be increased to 60 to 65% from the current 33% and said that England is now salvaging more than 85% of her paper and paper board.

Elimination of Packaging Frills Urged

E. J. Detgen, containers division of WPB urged elimination of packaging frills and sales stimulants and warned that concentrated effort would be encessary to solve the wartime container problem.

R. G. Peck, containers division of WPB, was of the opinion that the supply of metal caps will improve but the improvement will be discounted by shortages of some of the 76 different items used for cap liners including paper and adhesives.

Hold War Time Conference

More than 3500 executives and war plant officials attended the thirty two panel sessions which featured the Chicago War Production Conference held on March 30 at the Stevens Hotel, Chicago. One of the panel sessions sponsored by the Chicago Professional Paper Group, with H. R. Alley as chairman, discussed methods of packaging war goods to pass inspection. Mr. Alley, technical director of Tested Papers of America, Inc., presided over a panel which was devoted entirely to an analysis of war time packaging presented by officers of the Ordnance District and representatives of the Army and Navy. Another panel on "Packaging" was very popular with problems in paper packaging and shipping containers for food and the problems in military packaging of food products as two main topics of discussion. Dr. H. S. Van Vleet, American Can Company, presided at this panel which was sponsored by the Institute of Food Technologists. "Share an Idea for Victory" was the theme of the one day session.

Kenneth Trowbridge Goes With WPB

WASHINGTON, D. C., April 3, 1944—Kenneth Trowbridge, of Brunswick, Ga., has been appointed a consultant in the Paper Division, Forest Products Bureau of the War Production Board, Rex W. Hovey, director of the Paper Division, announced today.

Mr. Trowbridge is a graduate of the University of Washington and an experienced forester, especially in mechanized logging and in general woods equipment. For the past six years he has been connected with the Brunswick Pulp and Paper Company, of Brunswick, Ga.

He has been released by his company to go to WPB, where he will assist James Madden, deputy director in charge of the Pulpwood Production Branch of the Paper Division.

Raw Material Situation Improves

WASHINGTON, D. C., April 5, 1944 — During the past 6 months' diligent efforts on the part of the Government to provide more labor for logging and to persuade the public to save waste paper have improved the paper situation somewhat, says the Department of Commerce. During the first half of 1944 the total supply of wood in the United States, Canada and Newfoundland will be forthcoming at an annual rate of only about 21 million cords as compared with consumption needs of nearly 24 million cords.

The goal of the salvage program is to obtain 66 percent of the recoverable supply of waste paper in the United States. This compares with 45 percent recovered in 1943, 42 percent in 1942, and 38 percent in 1941. If the 66-percent goal is reached in 1944, the total waste paper recovered will amount to 8 million tons.

Amro Paper Co. Plant To Be Sold

John H. Pfenninger, sheriff, has advertised a sale of real estate to be held Friday, April 14, 1944, at 2:00 o'clock, including buildings, machinery, tools, fixtures, hangings, engines and boilers seized and taken in execution as property of the Amro Paper Company, a corporation incorporated under the laws of the state of Pennsylvania, having its principal office in Manheim Township, Lancaster County, Pa.

The sale will take place on the property.

C. W. Boyce Resigns From WPB

Charles W. Boyce, special assistant to the director of the Paper Division of the War Production Board has submitted his resignation effective March 31.

A Heavy Duty Clutch can be Simple- Positive- Trouble-free

See how it works

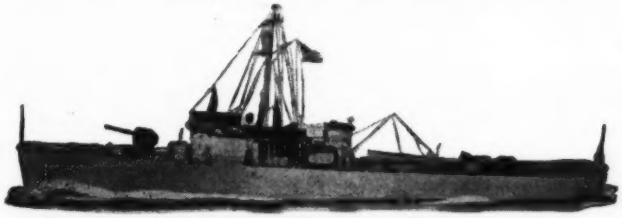
This is a new type of heavy duty clutch. It controls power by air pressure. It is a new—but thoroughly proved—way to transmit power from its source to the machine that does the work.

At the left you see a diagram showing the clutch disengaged. A rubber and fabric air gland, on the drive member, rolls free of the driven member.

At the right, you see the gland inflated. It expands against the driven member, to effect a clutch action that can be as light, or as firm, as you want it. Deflate the gland and the clutch is disengaged.

That's the principle of the Fawick Airflex Clutch—as simple as that! It requires no levers, arms, toggles or springs—no lubrication. No adjustment—low maintenance—long service.

Here is PROOF OF PERFORMANCE



Many hundreds of Vessels in the Navy and Merchant Marine are equipped with the Fawick Clutch.

Here is the CLUTCH that brings you *these 12 Advantages*

1. **Simple in design and operation**
2. **Flexible control by air**
3. **No adjustments or oiling—low maintenance**
4. **Dampens vibration—absorbs shocks**
5. **Corrects misalignment automatically**
6. **Smooth starting—no jerks**
7. **Runs cooler—uniform pressure**
8. **Controls torque by air pressure**
9. **Greater capacity—more compact**
10. **Remote control by air valve**
11. **Replaces flexible couplings**
12. **Acts as clutch, slip-clutch, brake and coupling.**

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FAWICK *Airflex* CLUTCH

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Institute Confers Degree Upon Dr. Purves

Five Students Also Awarded Degrees At Fourteenth Commencement of the Founding of the Institute of Paper Chemistry—Meet To Discuss Long-Range Timber Conservation Plan — Other Late News.

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., April 3, 1944—The doctor of philosophy degree was bestowed on five graduates of the Institute of Paper Chemistry at Peabody Hall, Lawrence College, on Monday evening, March 27, and an honorary doctor of science degree was conferred upon Dr. Clifford B. Purves, professor of industrial and cellulose chemistry at McGill University, Montreal, Canada. Dr. Purves was the commencement speaker.

Ralph J. Watts, acting president of Lawrence College, conferred the degrees upon the candidates, who were presented by Dean Harry F. Lewis of the Institute. Professor Arthur Weston of the college and Dr. Otto Kress of the Institute placed the hoods on the graduates as each was presented with his diploma.

It was the fourteenth commencement since the founding of the Institute in 1929, but the first held independently of the commencement of the college, with which the Institute is affiliated.

The five students receiving their degrees are: Victor S. Burstein, Neenah, Wis., a graduate of the University of Wisconsin; Joseph W. Shimp, Jr., Philadelphia, Pa., Drexel Institute of Technology; Charles M. Sigvart, Great Falls, Mont., Montana State University; Berwyn B. Thomas, Tuscon, Ariz., University of Arizona; and Jack J. Yirak, Omaha, Neb., a graduate of Iowa State College. They brought to 82 the total number of doctor of philosophy degrees granted by Lawrence to Institute graduates. A total of 125 master of science degrees have also been given.

The Westbrook Steele medal, awarded each year to that graduate who presents the best thesis, went to Mr. Sigvardt. Mr. Steele is executive director of the Institute.

Dr. Purves, who is considered the foremost man in the field of cellulose chemistry, presented a highly technical discourse on "Reactivity of the Different Types of Hydroxyl Groups in Cellulose." He has recently been called by McGill University to serve as the E. B. Eddy professor of industrial and cellulose chemistry, and has been placed in charge of the division of industrial and cellulose chemistry of the Pulp and Paper Research Institute of Canada.

Recounts History of Paper Institute

The history and accomplishments of the Institute, since it was founded 14 years ago, was traced last week in an address before the Appleton Rotary Club by John Strange, secretary-treasurer.

At first, the Institute was backed by 19 mills and had a budget of $40,000. Today there are more than 100 corporations with a total of 400 plants backing it, and the yearly operating budget is approximately $500,000.

Mr. Strange said that the Institute is the first and most significant alliance of education, research and industry in the entire commercial world, and that it has been an outstanding contributor to that new profession which has created the industrial scientist. Of the 218 men who have left the institution, many are in key industrial positions within the paper industry, and many others are in military service. Thirty-eight members of the staff of 150 have left for war service, but replacements have thus far enabled a full staff to be maintained.

At present, much of the research is largely tied up with the war effort, a large part of it secret. Much is aimed toward the alleviation of the paper shortage, by improving papers and by finding substitute fibers. The Institute has expended over 30,000 man-hours in testing work for the quartermaster corps alone.

Discuss Timber Conservation Plan

Plans for a long-range timber conservation plan sponsored by the Wisconsin division of the forest industries information committee were discussed at a meeting of lumber and paper mill officials March 28 at the Wausau Club, Wausau, Wis.

Folke Becker, president of the Rhinelander Paper Company, Rhinelander, Wis., presided as chairman of the committee, and the meeting was attended by Fred G. Wilson, superintendent of cooperative forestry of the Wisconsin Conservation Commission.

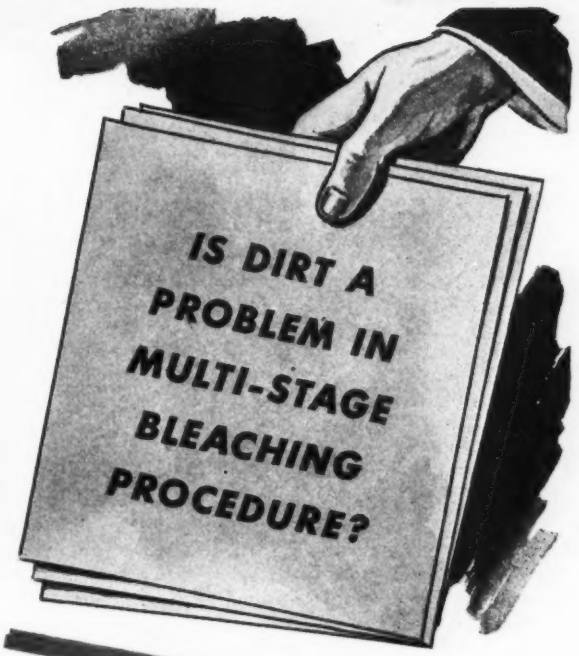
Under the plan sponsored by the committee, in cooperation with the conservation commission, the latter would certify commercial tracts as "industrial forests" when sufficiently high management standards are maintained to provide optimum timber regrowth conditions. Encouragement of expansion of private forestry among timber owners of the state is expected to be effected through recognition of outstanding Wisconsin commercial forest areas under the plan.

Wausau members of the committee include John Stevens, Jr., Marathon Paper Mills Company; Harold C. Collins, president of the Wausau Paper Mills Company, and J. D. Mylrea, Rib Lake Lumber Company; and others are Mr. Becker; F. E. Sensenbrenner, Kimberly-Clark Corporation, Neenah; O. T. Swan and H. S. Crosby, Oshkosh; F. G. Kilp, Nekoosa-Edwards Paper Company, Port Edwards; E. B. Hurst, Consolidated Water Power and Paper Company, Wisconsin Rapids, and V. I. Ruhmer, Phelps.

The International Brotherhood of Papermakers, Local 66 (AFL) last week appealed to the Wisconsin State Supreme Court the decision of Circuit Court Judge Gerald Boileau in the union's suit against the Wisconsin Employment Relations Board, the appeal being filed with the clerk of court at Rhinelander, Wis.

The union appealed all of the decisions except a part which favored the local—a ruling that the union would not have to pay half of the back wages of Gwynne Netling, a former employe of the Rhinelander Paper Company, who was discharged for failure to join the union. Upon his appeal, the state labor board ordered the company and union to share the cost of his back wages and to post notices stating that union membership was not a condition of em-

Suggestion FROM HOOKER



Low brightness ceilings have eliminated some worries in Multi-stage bleaching. The bleaching time is shorter and greater production or savings in steam are possible. However, at lower brightness values, dirt is a real problem!

TO KEEP DIRT CONTENT OF BLEACHED PULP AT A MINIMUM:

Reduce the proportion of Chlorine used in the Chlorination stage. When the brightness standard is lowered, it is not necessary to force the Chlorination. Keep the proportion of Chlorine in the hypochlorite stage relatively high. This is especially true in the case of sulfite pulps.

This suggestion is made to stimulate study and investigation, with more efficient production as a result.

The history of the Hooker Electrochemical Company is closely related to the Pulp and Paper Industry. During our entire experience, one of our aims has been to make outstanding pulp and paper chemicals, and to help the Pulp and Paper Industry to the extent that our knowledge and research permit.

Let us add our experience to yours in these times when efficient production is vital. For assistance or technical advice on problems of a chemical nature, write Dept. PT4.

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ployment. The union appealed, and Judge Boileau upheld the board, with exception of the wage payment order. The union claims the Wisconsin law is unconstitutional.

Labor Board Denies Wage Request

The Sixth Regional War Labor Board at Chicago has denied a union request for increased wages at the Badger Paper Mills, Peshtigo, Wis.

Thilmany Club Elects Officers

There are 102 active members in the Thilmany Quarter Century Club of Thilmany Pulp and Paper Company at Kaukauna, Wis. A. M. Schmalz was elected president at a meeting last week. Paul N. Reynolds, executive secretary of the Wisconsin Taxpayers Alliance, Madison, Wis., was the speaker, his subject being "Taxation."

Marathon Takes Over Hoskins Plant

The Marathon Paper Mills company of Rothschild, Wis., was to take over operation of the Hoskin Paper company's plant here April 1 on a long term lease with option to purchase under an agreement approved by the Hoskin stockholders this week.

Richard A. Hoskin, president and general manager of the Hoskin company, will be retained as resident manager.

Arthur G. Wakeman Resigns

WASHINGTON, D. C., April 5, 1944—Arthur G. Wakeman, assistant director of the War Production Board Forest Products Bureau, has resigned, as of April 1, and will return to his home in Appleton, Wis., where he will again become actively engaged in the paper industry, the WPB Forest Products Bureau announced today.

Mr. Wakeman has been serving the WPB since March 1, 1942, when he was appointed as assistant to the Chief of the Pulp and Paper Division. In October of the same year, he was designated as director of the Division.

During Mr. Wakeman's term as director, the pulp and paper supply became very critical and a number of the present controls and limitations were necessary. His efforts contributed to keeping up production in the paper and board mills to meet the heavy demands for war uses and civilian requirements. He was director of the Pulp and Paper Division until the reorganization of the old Commodities Bureau into the Forest Products Bureau under Director Harold Boeschenstein of Toledo, Ohio, last fall. After serving a period as special assistant to Mr. Boeschenstein, Mr. Wakeman was made assistant director of the Bureau.

Prior to his coming to WPB, Mr. Wakeman was connected with the Fox River Paper Corporation, paper manufacturers of Appleton, Wis.

He recently returned to Washington after a trip to England, where he made a special study of the paper and paperboard situation for the Forest Products Bureau with special regard to wartime requirements.

Mr. Boechenstein has requested Mr. Wakeman to serve as a consultant on paper and paper products from time to time as his services may be required. No successor to Mr. Wakeman has been designated.

FINANCIAL NEWS

New York Stock Exchange

High, Low and Last for Week Ending April 1, 1944

STOCKS

	High	Low	Last
A. P. W.	2⅝	2⅝	2⅝
Armstrong Cork Co.	37½	37	37⅜
Celotex Corp.	11⅞	11½	11⅞
Celotex Corp., pf.	18	17⅜	17⅞
Certain-Teed Products Corp.	5⅝	5⅛	5½
Certain-Teed Products Corp., pf.	63¼	60½	61½
Champion Paper & Fibre Co.	24¾	24¼	24⅜
Champion Paper & Fibre Co., pf.	110	109½	109¾
Congoleum Nairn Co.	24	23½	24
Container Corp. of America	23⅝	22¾	23
Continental-Diamond Fibre Co.	12	11½	11¾
Crown-Zellerbach Co.	17⅛	16½	16⅝
Crown-Zellerbach Co., pf.	99½	98	99
Dixie Cup Co.	16¾	16	16¼
Dixie Cup Co.—A	44½	44¼	44¼
Flintkote Co.	23⅜	21⅜	22⅜
Flintkote Co., pf.	107	107	107
Robert Gair	3⅝	3½	3½
Robert Gair, pf.	15	14½	14¾
International Paper Co.	15⅛	14⅛	15
International Paper Co., pf.	74½	72¾	73⅛
Johns-Manville Corp.	90½	89¾	89¾
Johns-Manville Corp., pf.	....	....	....
Kimberly-Clark Corp.	34	34	34
MacAndrews & Forbes	26¼	26⅛	26⅛
MacAndrews & Forbes, pf.	....	....	....
Masonite Corp.	38½	37½	37¾
Mead Corp.	9⅜	8¾	8¾
Mead Corp., pf. A—6%	89½	89½	89½
Mead Corp., pf. B—5½%	80	79	80
National Container Corp.	14¾	14⅛	14¼
Paraffine Companies, Inc.	48¾	47½	48¾
Paraffine Companies, Inc., pf.	106	106	106
Rayonier, Inc.	15	14	14⅛
Rayonier, Inc., pf.	30⅛	29⅝	29¾
Ruberoid Co.	29⅛	29	29⅛
Scott Paper Co.	39	38¼	38½
Scott Paper Co., pf.	110¾	110	110¼
Sutherland Paper Co.	30	30	30
Union Bag & Paper Corp.	10⅝	9⅞	10⅜
United Paperboard Co.	5⅛	4¾	5⅛
U. S. Gypsum Co.	72	70	72
U. S. Gypsum Co., pf.	179	178	178
West Virginia Pulp & Paper Co.	18⅞	18¼	18⅞
West Virginia Pulp & Paper Co., pf.	106¾	106½	106½

BONDS

Abitibi Pulp & Paper Co., 5s '53	70¾	70¾	70¾
Celotex Corp. 3¾s '55	103⅝	103⅝	103⅝
Certain-Teed Products Corp. 5½s '48	100½	100¼	100½
Champion Paper & Fibre Co. 4¾s '50	....	....	....
International Paper Co. 6s '55	105¾	105¼	105½
International Paper Co. 5s '47	104¼	104	104
Mead Corp. 3½s '53	....	....	....
West Virginia Pulp & Paper Co. 3s '54	....	....	....

New York Curb Exchange

High, Low and Last for Week Ending April 1, 1944

STOCKS

	High	Low	Last
Great Northern Paper Co.	33	32	32
Hummel-Ross Fibre Corp.	5⅛	4⅞	4⅞
St. Regis Paper Co.	4¾	4⅜	4⅜
St. Regis Paper Co., pf.	152	150	150
Taggart Corp.	5½	5⅜	5½

BONDS

American Writing Paper Co. 6s '61	100¼	100¼	100¼

Downingtown Elects Officers

At a recent board meeting of the Downingtown Manufacturing Company, the following officers were elected: Ellis Y. Brown, Jr., president and treasurer; Jacob Edge, vice president in charge of sales; Edward T. Street, vice president in charge of engineering; Enright A. Ellis, vice president in charge of manufacturing; Ellis Y. Brown, III, secretary; Elizabeth M. McFadden, assistant treasurer.

Consolidated Earns $1,294,228

The Consolidated Paper Corporation, Ltd. for 1943 reports, after $1,000,000 provision for taxes, compared with $167,000 in 1942, there remained a balance of $1,294,228, transferred to earned surplus account, compared with $396,000, the year before.

DID YOU KNOW?

NATIONAL

supplies large quantities of

ADHESIVES & STARCH PRODUCTS

for packaging Emergency Ration components & sealing the cartons

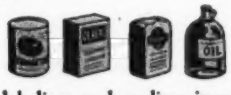
for making Shoes, Rifle Scabbards, and other leather goods

for making Earmuffs, Gloves, Chevrons, etc.

for packaging Insecticides, Cleansers, and Canteen Water Purifiers

for sizing and finishing Mosquito Netting and Head Nets

for making Games and Sporting Goods



for labeling and sealing items of Subsistence (foods)

for sizing regulation and camouflage Uniform Fabrics

for sealing Cases; making and applying Packing List Envelopes

&

for other applications too numerous to list here, important to the Quartermaster Corps in providing for the health, welfare and fighting efficiency of our army personnel.

Buy More War Bonds!

No. 3 of a series

THE U. S. ARMY

QUARTERMASTER CORPS

. . . World's Best PROVIDER!

"BEST FED, best clothed, best equipped army in the world"...the pride of America is the achievement of the Quartermaster Corps.

So vast a responsibility is difficult for the average person to comprehend . . . millions of troops scattered all over the globe . . . thousands of miles of supply lines under constant enemy fire . . . forces shifting, requirements changing, the unexpected happening every day.

To anticipate the needs of the Army ground and air forces is alone a staggering job, but to overcome the difficulties and face the hazards of delivering the goods to far-flung battlefronts defies a tribute of words.

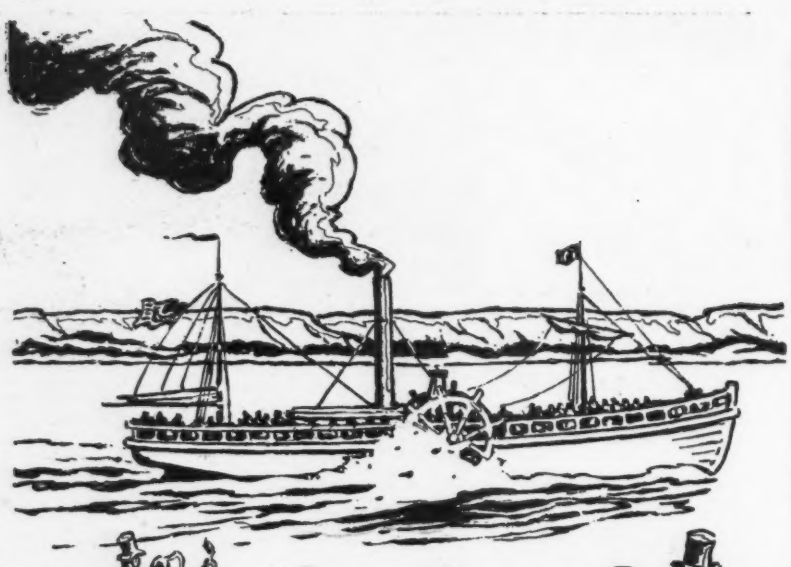
In an undertaking of such magnitude, the importance of adhesives and starch products, for purposes such as those shown at the left, might easily be overlooked . . . but nothing escapes the Quartermaster Corps. It is this close attention to detail that has won for the Corps the implicit faith of its dependent millions.

NATIONAL STARCH PRODUCTS

INCORPORATED

270 MADISON AVENUE, NEW YORK 16, N. Y.

PLAINFIELD, N. J. • PHILADELPHIA, PA. • BOSTON, MASS. • CHICAGO, ILL. • INDIANAPOLIS, IND. • SAN FRANCISCO, CAL.



American Pioneers

Robert Fulton's famous craft, the "Clermont"—built in 1807, was the first passenger-carrying steamboat operated on regular schedule. It plied the Hudson River between New York and Albany.

The first successfully operated steamboat dates from approximately the time of the first successfully operated paper machines. Both ran very slowly.

Modern paper machines run relatively fast. In nautical terms, some attain a speed of about fifteen knots. This calls for accelerated water removal and specially designed felts to keep step with machine speeds.

Whatever your requirements may be, you may achieve maximum water-removal, minimum steam cost and good production by clothing your machines with **DRAPER FELTS.**

Draper Felts Favor Efficiency

DRAPER BROTHERS COMPANY

Woolen Manufacturers Since 1856

CANTON, MASS.

OUR REPRESENTATIVES *to serve you*

L. H. BREYFOGLE, Kalamazoo, Mich.

RALPH E. BRIGGS, Canton, Mass.

W. L. CAMPBELL, Savannah, Ga.

E. R. LELOFF, Vancouver, Wash.

CHAS. E. BERTSCHY, Milwaukee, Wis.

Save and Serve

Our factories are going and have been going at "break-neck" pace . . . twenty-four hours a day . . . seven days a week. The machinery in these plants must not only see us through the war but also into the peace. Because, in most industries if the present equipment is not preserved for the future production, the demand for replacement will far exceed the capacity to replace. We must save vital equipment with proper maintenance.

And the number one item in maintenance is proper lubrication. In fact, many have said lubrication is the basis of all maintenance. Engineering facts and figures have proved conclusively that the right lubricant—oil or grease—in the right place can effect a threefold saving in . . . Labor required for repairs and extra maintenance that can be utilized elsewhere. Equipment is made to last longer and produce more. Time wasted by unnecessary breakdowns can be utilized for production.

Now, the Sun Oil Company offers industry its Save and Serve Campaign.

The purpose of the campaign is to provide maintenance data on proper lubrication . . . prolong the life of machines . . . conserve labor by increasing production per unit . . . and save time by reducing "down time" for repairs.

The complete campaign includes lubrication booklet, wall chart, plant poster, industry folders, technical bulletins and maintenance memos, which are available to all manufacturing industries adopting the plan.

Complete and detailed information on this campaign may be obtained by writing direct to Sun Oil Company, Philadelphia 3, and requesting the campaign prospectus. It gives a detailed description of each part of the Save and Serve Campaign and tells how to obtain a supply for your plant.

Paper Shipments Higher

January index of the value of paper mill shipments was 159 compared with 138 in January of last year taking an average month of 1939 at 100 according to the monthly industry survey of the Department of Commerce.

Also taking an average month of 1939 at 100 the Department's figures state that the January index of the value of paper mill inventories was 133.0 compared with 141.4 in the same month of last year.

Three-Dimensional Seeing

Present developments in "Three-Dimension Seeing" were presented to the trade press at a meeting given by the Finishes Division of the E. I. DuPont de Nemours & Co., Wilmington, Del., at the Waldorf-Astoria Hotel, New York, on March 29.

"Three Dimensional Seeing" is a new science of color and light, developed by Arthur A. Brainerd, supervisor of lighting service, Philadelphia Electric Company, in collaboration with DuPont. Since its introduction the system has been widely practiced throughout industry, resulting in increased production, fewer accidents, less fatigue, better working conditions and improved morale of factory workers.

The system is simple and merely utilizes appropriate colors. By painting machinery in colors having high light-reflecting qualities operators see their work in three dimensions, sharp and clear. This reduces errors and rejects to a minimum, flaws are quickly detected and increased output, uninterrupted by accidents or loss of man-hours is a natural result.

Some of the important advantages of the system may be summarized as follows: Floors reflect light upward, increasing visibility at the working plane, promoted safety; makes scattered tools and debris more obvious and prevents stumbling; marks traffic lanes, bin locations and receptacle stations. Safety markings in yellow and red indicate danger areas of machinery, protruding handles, overhead cranes, edges of platforms and pits and other hazards. Points out exits and positions of fire-fighting equipment. Dadoes provide an "artificial horizon," at which operators may look to seek eye relief and overcome retinal fatigue. Piping may be identified for heat, air, water and fuel, as well as electrical conduits.

Detailed results of recent experiments with color and light and further particulars of "Three Dimensional Seeing" may be obtained from the E. I. DuPont de Nemours & Co., Finishes Division, 8030 DuPont Building, Wilmington, Del.

Scientific Inspection

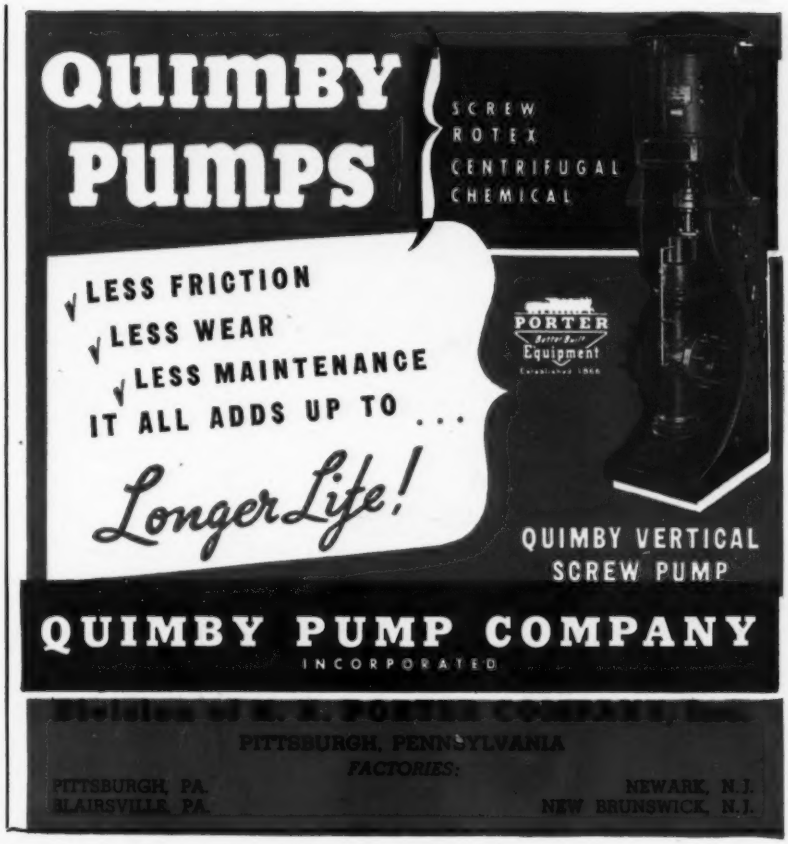
"Quality Control" is the title of a new pocket size handbook on scientific inspection just being released by Continental Machines, Inc., 1301 Washington avenue South, Minneapolis 4, Minn.

The handbook is exclusive and unique in its brief but concise explanation of the entire subject of Precision Measurement. The use of dozens of photographs, diagrams, charts and tables make its explanation of scientific inspection interesting, absorbing and informative.

Anyone reading its sixty-four pages cannot help but have a working knowledge of this important phase of modern production. As such, its use will be of particular value to any plant inspection department seeking new ways to establish quality control over their products.

The booklet is dedicated to Eli Whitney, the father of mass production, whose invention of interchangeability of parts has become highly developed through the use of precision measuring instruments to interpret fine dimensions.

Of great interest are the many tables and data pertaining to gaging methods used in precision measurement. One section highlights twenty-four subjects vital to precision measuring and explains the use of many precision instruments such as the sine bar, vernier gage, optical flats, etc. At the end of the book fifty-three key questions are given with their answers, serving both as a check and test of the knowledge gained by the reader in studying this handbook. Also offered is a group of films, charts and illustrated booklets as further training aids on scientific inspection which can be secured from Continental Machines, Inc.

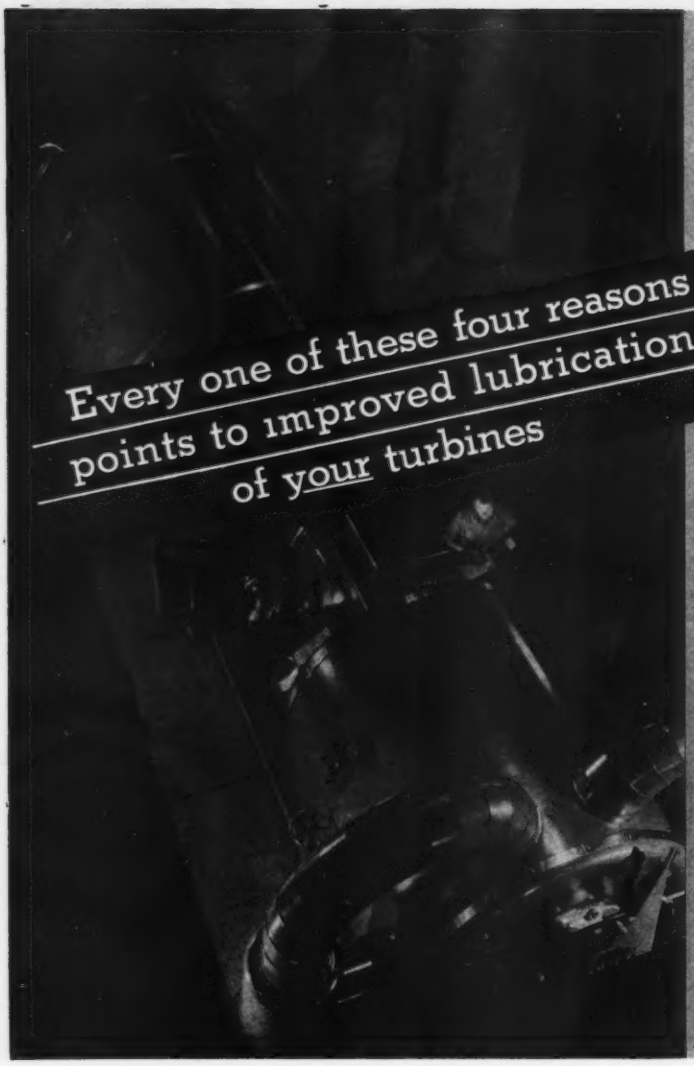


Joins Diamond Alkali

Dr. John Meiler has joined the Research Department of Diamond Alkali Company, according to an announcement by J. M. Avery, vice-president in charge of that division.

Dr. Meiler will be in charge of the Research Department's work in the wood chemical field, and will have offices at Painesville, Ohio. For the past ten years he has been director of the Plastic Division of the Marathon Paper Mill Company, at Rothschild, Wisconsin; and prior to that, with the A. O. Smith Corp. of Milwaukee, doing research on iron, steel and plastics.

Dr. Meiler is a graduate of the University of Chicago, from which university he holds degrees of B.S. and Ph.D. in physical chemistry. At one time he taught this subject at the University of Nebraska. He is a member of the American Chemical Society, American Physical Society, Electrochemical Society, the Society of Plastic Engineers and the Society of Plastics Institute.



4 reasons why Gulfcrest Oil LEADS THE FIELD

1 REFINED BY THE ALCHLOR PROCESS. The most thorough and effective method for removing chemically active or unstable hydrocarbons as well as other impurities present in all crudes.

2 HIGHEST RESISTANCE TO OXIDATION. Because this famous ALCHLOR Process synthesizes and rearranges the molecular structure of certain hydrocarbons more susceptible to chemical change in service, the finished oil has greater stability. GULFCREST OIL stands alone in its high resistance to oxidation.

3 HIGHEST RESISTANCE TO THE FORMATION OF ORGANIC ACIDS AND SLUDGE. Because of the elimination or rearrangement of the less stable hydrocarbons, the unparalleled refining power of Alchlor Process provides oils that form less gum and deposits, less sludge, and a higher resistance to emulsification when mixed with water, insuring years of uninterrupted service.

4 MAXIMUM K.W. OUTPUT PER UNIT OF CONSUMPTION. Because the Alchlor Process not only makes possible an oil more highly refined and homogeneous but with a greater resistance to oxidation and deterioration, longer life is insured and less make-up oil is required.

Gulfcrest Oil has the two important assets you want in a turbine lubricant: *superior lubricating value, longer life!*

These assets are the result of more thorough and more complete refining. For Gulfcrest Oil is not only refined by conventional methods, but is super-refined by the Gulf Alchlor Process, the most effective method for producing a turbine oil with maximum resistance to oxidation and sludge. Gulfcrest Oil is the world's finest turbine lubricant!

Call in a Gulf Lubrication Service Engineer and ask him to show you how Gulfcrest Oil can help you get improved lubrication and higher operating efficiency. Write, wire, or phone your nearest Gulf office today.

GULF INDUSTRIAL LUBRICATION

Gulf Oil Corporation · Gulf Refining Company
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BACK THE ATTACK . . . BUY MORE WAR BONDS

Flexibility

Our 78 years of service to the Paper Industry have included more than one period when, despite raw material limitations, ingenuity has enabled us to keep our paper manufacturing and paper converting customers always supplied with high quality products.

Flexibility has continuously been our watchword. And so, although some of our standard starches, gums and dextrines may not be readily available at all times, our Paper Laboratories have developed alternate materials to serve the same purposes. Working with our field staff of paper technicians, our Paper Laboratories are ready to help you solve your sizing, calender, coating and adhesive problems.

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PAPER
TRADE JOURNAL
Title Reg. U. S. Pat. Off.
Henry J. Berger
EDITOR

No. 118 April 6, 1944 No. 14

COMING EVENTS IN PAPER INDUSTRY

NEW ENGLAND SECTION. Technical Association of the Pulp and Paper Industry—Third Friday of each month at the Roger Smith Hotel, Holyoke, Mass.

DELAWARE VALLEY SECTION. Technical Association of the Pulp and Paper Industry—First Friday of each month at the Engineers Club, Philadelphia, Pa.

LAKE STATES SECTION. Technical Association of the Pulp and Paper Industry—Second Tuesday of each month at the Conway Hotel, Appleton, Wis.

KALAMAZOO VALLEY SECTION. Technical Association of the Pulp and Paper Industry—First Thursday of each month at the Park, American Hotel, Kalamazoo, Mich.

CHICAGO PROFESSIONAL PAPER GROUP—First Monday of each month except July and August at Chicago, Ill.

AMERICAN PULP AND PAPER MILL SUPERINTENDENTS ASSOCIATION—25th Anniversary Convention, Edgewater Beach Hotel, Chicago, Ill., May 24, 25 and 26.

POST-WAR EMPLOYMENT

Full employment of all men and women who want to work is an obvious requirement for post-war prosperity. Nothing can be substituted for competent labor and labor must be provided with an adequate annual compensation to insure a continuance and, if possible, to increase the high standard of living formerly enjoyed. The National Association of Manufacturers has recently issued a booklet entitled, "Post-War Industry and Jobs," containing the addresses of two prominent industrialists who spoke at the association's Second War Congress of American Industry, held in New York last December. In his remarks, K. T. Keller, chairman of the session, and vice-president in charge of manufacturing for the Chrysler Corporation, pointed out that, "I wish to emphasize the fact that opportunity for steady employment for the generation now alive — whether in ownership, management, or labor — and mass distribution to match mass production of goods — are all tied up in the way we get free from this war. If we do not make sure now of public policies which will work out in practice, we are likely to move out of the war only into a theoretical freedom, a statistical opportunity, and non-existent jobs."

In commenting on post-war opportunity for industry and labor, Wilfred Sykes, chairman of the post-war committee of the N.A.M., and president of the Inland Steel Company, stated: "The greatest post-war problem of this country today is, 'Will government let go of private enterprise so that it can again be free?' A related question of perhaps equal importance is, 'If government frees enterprise, in what manner will it do so?' We cannot afford to drift into peace unprepared to face the problems of the transition period. . . . Further, the government now owns twenty billion dollars of new war plants and production equipment, representing a great expansion of the prewar plants and equipment of private enterprise. If the government goes into peacetime competition with private enterprise, then private enterprise will be wrecked. What is to be done with these government properties? Likewise, how is the government to dispose of the surplus war supplies which it must carry in reserve until the war is over, amounting to perhaps fifty billion dollars of diverse products. This supply will represent months of the entire production for some industries and years for others. If these surplus products are dumped into the market, they will glut it, break prices, and halt production and post-war jobs. Industry's plans for post-war jobs may further be frustrated by the renegotiation and tax laws, aimed at excess profits but operating practically to hamper the accumulation of sufficient reserve funds and working capital to enable private enterprise to reconvert to peacetime operation. There can be no employment without employers. And no employer will be able to find a job for a man out of the armed forces or the war plants until he is first able to find capital."

Commenting on the start of peacetime production, Mr. Sykes said in part: "We cannot, however, hold up all return to normal business until everyone can start off some fine morning, and all simultaneously begin manufacturing automobiles, refrigerators, radios, etc., at some predetermined rate. That would mean stagnation. No, we will have to take some chances, and maybe some will be aggrieved, but it will be better for all if controls are eliminated the moment their existence ceases to be necessary for the national welfare. The individual initiative of thousands of manufacturers struggling to turn their businesses to the path of peace will give a better solution than any set of rigid rules from Washington. . . . The solution of these post-war problems will require more reasonableness than ever prevailed before in the relations between the political and economic systems — and more reasonableness likewise among the component parts of the economic system itself. Within that system, whether we represent management or labor, that unless the self-interest is really enlightened, it may bring about, inadvertently, the destruction of the very system which it sponsors. . . . The important thing to remember about our enterprise system is that it must run—no matter who runs it or how efficiently. That is the common stake we all have in it—whether management, labor, or consumers. We would have no food if the farmers did not consider it worth while growing any more, or if the transportation system shut down. There would be no jobs if capital did not continue to invest in tools. And no profits if labor would not work."

In discussing the question of whether industry will or not be free to act, Mr. Sykes said in part: "The President in the food message (speech to Congress on the food situation, November 1, 1942) declares that the government price guarantees to farmers should extend not only during the war but for two years afterward. And still further he adds textually: 'There is no valid reason why the present stabilization subsidies should not be continued as well as the support prices to farmers, so long as they are clearly in our national interest.' . . . Before industry can talk soundly of hiring post-war hands it must know whether it is going to be a hired hand itself with government doing the hiring. And until industry knows this, no post-war planning can be better than speculation concerning the jobs, freedom, and opportunity that we thought the war would lead us back to."

Butterworth Plans Reorganization

Following consultations with the company's counsel, a plan for the re-organization of H. W. Butterworth & Sons Company, Philadelphia, Pa., was evolved—and approved by the Board of Directors—which would enable junior executives, superintendents, foremen and others connected with the company in executive or supervisory capacity to secure stock and thus have a definite interest in the growth of the company. The plan also made it possible for the investors and decedents' estates now holding stock in the company to exchange it for an obligation of the company and so facilitate the repayment of their investment in the company.

Production Ratio Report*

(Production as per cent of six-day capacity)

COMPARATIVE WEEKLY SUMMARIES

Current Weeks—1944		Corresponding Weeks—1943	
February 19	91.2	February 20	89.0
February 26	89.2	February 27	91.0
March 4	88.7	March 6	89.7
March 11	89.1	March 13	89.8
March 18	92.2	March 20	88.9
March 25	*90.3*	March 27	90.6

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July
1943	87.2	88.9	89.5	88.7	91.4	84.8	84.3
1944	90.1	*90.6*	...	...	...	...	...

Year	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1943	91.0	88.3	89.6	89.6	82.0	87.8

COMPARATIVE YEARLY SUMMARIES

	1937	1938	1939	1940	1941	1942	1943	1944
Year to Date	89.3	66.7	79.4	85.9	88.9	103.7	88.6	*90.3*
Year Average	79.8	71.5	83.4	85.6	97.4	90.4	87.8	...

* Based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available. Does not include mills producing newsprint exclusively.

PAPERBOARD OPERATING RATIOS†

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1938	56	63	63	60	60	59	59	69	70	73	67	61	64
1939	65	73	76	74	69	73	68	77	82	91	88	77	77
1940	78	75	74	76	82	85	77	79	78	85	83	77	78
1941	81	88	89	89	91	94	92	98	95	99	98	90	92
1942	102	101	101	95	82	72	68	75	76	81	82	77	84
1943	86	88	94	94	96	94	89	96	94	94	93	87	93
1944	90	*96*	..	..	.	..	..	..	..	..	..	..	..

Week ending Feb. 19, 1944—96
Week ending Feb. 26, 1944—93
Week ending Mar. 4, 1944—95
Week ending Mar. 11, 1944—95
Week ending Mar. 18, 1944—95
Week ending Mar. 25, 1944—97

† Per cents of operation based on "Inch-Hours" reported to the National Paperboard Assn.

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OF AMERICAN PULP

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LYDDON
& COMPANY
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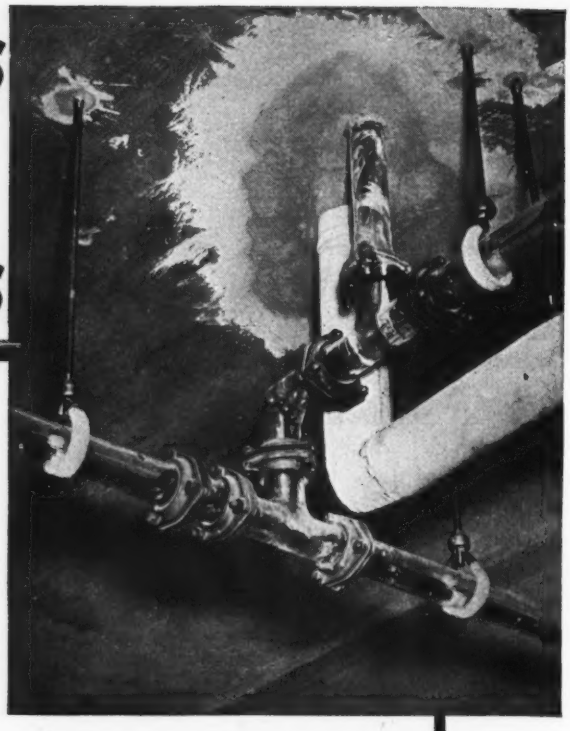
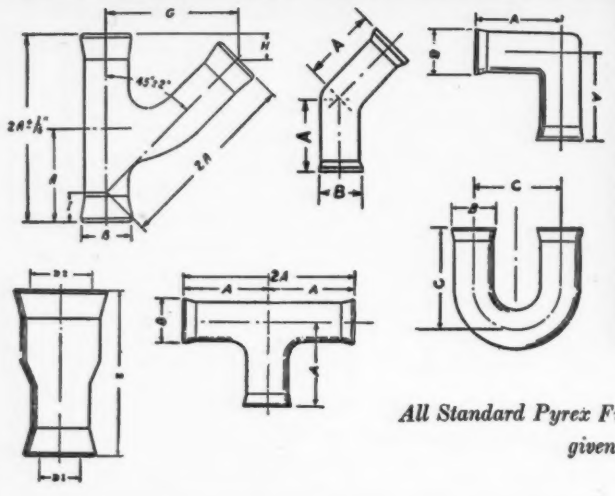
Standard Glass Fittings For Glass Pipe Lines





All Standard Pyrex Fittings are Interchangeable. Dimensions are given on Page 5, Bulletin 814.

PYREX Glass Piping is available in 1," 1½", 2", 3" and 4" diameters, with corresponding standard PYREX ells, tees, return bends, elbows, and reducers. These standard fittings answer for most installations. But if you need special fittings—reducer ells, reducer tees. etc. —they can readily be made to order.

• CORNING can also supply a complete line of adaptor connections to connect PYREX Piping to steel, cast iron, stainless steel, porcelain, hard rubber, and rubber lined metal. Now you can use PYREX Piping with *any* pipe line, tank, valve or pump.

Don't wait longer to get all the advantages of PYREX Piping: resistance to all acids, hot or cold (except HF)—ease of cleaning—resistance to thermal and mechanical shock—and transparency. No other piping combines all these important features.

If your process involves corrosive liquids or gases, if contamination of product is a factor, if you want to *know* what is happening inside your pipe line—you need PYREX Piping.

Should there be any questions in your mind as to the practicability of PYREX Glass Piping in your processes, Corning engineers will be glad to answer them. Your inquiry will be handled promptly.

Write for Bulletin 814 and complete details on PYREX Piping and Fittings. Industrial Division, Dept. PT4, Corning Glass Works, Corning, N. Y.

"PYREX" is a registered trade-mark and indicates manufacture by Corning Glass Works, Corning, N. Y.

CORNING
Glass Works
Corning, New York

Pyrex Industrial Glass

Section of the
TECHNICAL ASSOCIATION
OF THE PULP & PAPER INDUSTRY
122 E. 42nd St., New York 17, N. Y.
Edited by R. G. Macdonald, Secretary

Printing Characteristics of Bleached Groundwood Paper*

By Kent Rhodes[1]

Abstract

Bleached groundwood papers have been used by Fortune Magazine with satisfactory results. They have an appearance similar to sheets made of chemical pulps and less pressure is required on the press to obtain a uniform impression.

Since late 1941 bleached groundwood paper made by the St. Regis Paper Company has been used by *Fortune* Magazine for most of its uncoated paper requirements. The pressroom performance of this paper has been highly satisfactory.

Most printers agree that groundwood papers have desirable printing characteristics. The Du Pont bleaching process as used by St. Regis is noteworthy in that it improves rather than destroys groundwood's printability. The finished paper is just as receptive to ink as that made from unbleached groundwood pulp. In either case, compared with sheets made of chemical pulps, the groundwood papers have an inherent resiliency or "compressibility" which permits them to be satisfactorily printed with less pressure. The bleached groundwood paper excels unbleached in that it prints a little more uniformly and it has less of a tendency to fuzz or lint. The bleached paper also seems to be more homogeneous and finer in texture when compared with book grades of unbleached groundwood. Net production per hour in the pressroom remains the same as it would with any paper which is mechanically satisfactory.

Printing

Fortune's major use of bleached groundwood paper has been in the main editorial section of each issue. Almost all the pages in that section have been and are printed by gravure. From 1930 through mid-1941 a high grade 75 pound antique book paper made from bleached sulphite and bleached soda pulp was used. This paper was made with a distinctive wild formation which gave rise to regular hills and valleys in its surface. Special methods had to be devised to get sheet fed presses to develop sufficient pressure to print down into the valleys of the paper. Subsequently a high pressure web perfecting rotogravure press was constructed to meet this requirement. Though softer papers, made principally from bleached soda pulp were tried out, considerable difficulty was experienced in printing out the low spots of any rough paper well enough to satisfy *Fortune's* high standards of reproduction. At this time a trial lot of bleached groundwood paper of similar surface character was introduced. The low spots printed out satisfactorily with 350 pounds of pressure per lineal inch, whereas 550 pounds pressure would not reach into the low spots of a chemical pulp sheet. Previous trials of unbleached groundwood had printed as well as the bleached, but represented too much of a sacrifice in the appearance of the paper. The bleached groundwood sheet's brightness, color, and texture were acceptable. In a 62 pound weight it afforded the same opacity and bulk as the 75 pound chemical pulp sheet. By the end of 1943 the basis weight had been reduced to 50 pounds to meet paper conservation requirements.

Changing editorial tastes have also resulted in smoothing out the present paper.

It is also *Fortune's* practice to use bleached groundwood paper for editorial pamphlets or supplements which are inserted into the magazine after it is bound. These are printed on web perfecting offset presses. This paper is sized for offset printing and performs well, exhibiting the same characteristics as noted above.

* Presented at the Annual Meeting of the Technical Association of the Pulp & Paper Industry, Hotel Commodore, New York, N. Y., Feb. 14-17, 1944.

[1] Production Manager, Fortune Magazine.

Chemical Process Principles

John Wiley & Sons, Inc., has recently published an excellent 452-page book entitled Chemical Process Principles by O. A. Hougen and K. M. Watson, Professors of Chemical Engineering at the University of Wisconsin. It gives a comprehensive treatment of the application of the combined principles of chemical thermodynamics and kinetics to the problems of the design and operation of chemical processes and an analysis of conditions affecting adiabatic humidification, standard heats of reaction, thermoneutrality of salt solutions, accumulation of inerts in recycling, heats of adsorption, incomplete combustion of fuels, etc.

Copies may be obtained from the Book Department of the Technical Association of the Pulp and Paper Industry, 122 East 42nd street, New York 17, N. Y., at $4.50 per copy.

The Wood Pulp Situation*

By David Graham[1]

All are familiar with the broad trends of the pulp situation so I shall simply comment on these and then attempt to cover in a short period of time the present policies and procedures followed in the allocation of wood pulp.

Past

On December 8, 1941, when the United States of America formally declared War upon the Axis the hope of further imports of Scandinavian pulp for the duration of the European war disappeared. At the same time the Ordnance Department began to make increasing demands upon the market supply of pulp to support a huge program of munitions manufacture. It also became necessary to export increasing quantities of pulp to our Allies in Britain and in Latin America.

Offsetting these factors to some extent the production of wood pulp by domestic producers increased. In 1940 domestic production was 8,826,000 tons. By 1941 in response to increasing demands for paper and diminishing imports domestic production rose to 10,081,000 tons and in 1942 continued to increase, reaching 10,461,000 tons. In 1943, however, the scarcity of woods labor and the deterioration of equipment forced production back to a level of 9,381,000 tons. The imports of Canadian wood pulp also increased as the Scandinavian imports declined. In 1940 imports from Canada and Newfoundland totalled 778,000 tons which rose to 1,075,000 in 1941. In 1942 receipts of Canadian and Newfoundland pulp reported at United States mills were 1,197,000 tons; in 1943 receipts reported at United States mills were 1,255,000 tons.

In spite of increased production and Canadian imports, however, the supply of market pulp in early 1942 was critically short. Aggravating this condition was the fact that available pulp was unevenly distributed. Many mills had built up several months supply of inventories while others were unable to obtain enough pulp to meet essential requirements. The pulp producers were well aware of this situation yet lacked information to remedy it.

Out of the shortage of pulp grew two major developments in the early part of 1942. First, the waste paper collection campaign was pushed on a country wide basis. Consumption of fibers other than wood pulp in the manufacture of paper and paperboard increased. In 1941 reported consumption of waste paper, rags, straw, and other fibrous materials were 5,712,000 tons, in 1941 it was 7,219,000 tons, in 1942 it was reported as 6,832,000 tons, and in 1943 it rose above its 1942 rate to 7,498,000 tons. One of the major factors accounting for the huge increase in consumption of fibrous materials other than wood pulp was the increase in paperboard production.

The other major development arising from the shortage of wood pulp was the passing on March 12, 1942, of General Preference Order M-93 which put wood pulp under total allocation. This order replaced M-52, a temporary measure devised to spread the burden of nitrating pulp shipments. The provisions of M-93, required pulp producers to file monthly shipping schedules with the War Production Board and consumers to file monthly orders, receipts, consumption, and inventories. Allocations of wood pulp were then made to mills with insufficient inventories to operate during the delivery month and have a safe inventory at the end of the month. These allocations were made by the War Production Board aided by the advice of the Wood Pulp Allocation Industry Advisory Committee.

When reports from consuming mills were received in Washington on April 15, 1942, it became evident that the belief that the supply of wood pulp in the United States was unevenly distributed was well founded. Some mills were found to be holding a year's inventory of pulp. In one case, it was found that a mill held a supply sufficient for almost two years. On the other hand, some mills had only a few days supply of pulp at their mills. By blocking shipments to mills with long inventories and redirecting shipments to mills with a short supply the War Production Board was able for some months to spread the supply of market pulp in such a way as to keep all nonintegrated mills at a reasonable rate of operation.

In the summer of 1942 during the transition from a peacetime to wartime economy there was a sharp slump in the paper market which was reflected in the domestic production of wood pulp. In April of 1942 domestic production was 948,000 tons, in May it was 946,000 tons and by July it dropped to 797,000 tons. At the same time mills began to build inventories again. Total month end inventory held by domestic consumers and producers rose from 776,000 in April to 978,000 at the end of August.

The fact that this decline in production came at this particular time was extremely unfortunate because the curtailment of operations meant that both woods and mill labor were lost and it later proved impossible to replace this labor supply. Although consumption began to increase by the fall of 1942 pulp production did not recover by a like amount. As paper and paperboard increased, inventories of both pulp and wood rapidly declined as it became difficult to obtain woods labor and as logging equipment and trucks wore out. Inventories of wood pulp dropped from 978,000 tons at the end of August, 1942, to 872,000 at the end of the year 1942, and to 668,000 at the end of June 1943. Wood inventories declined to 2,324,000 from 3,828,000 cords during the same period. Inventories of waste paper declined from 584,000 tons in August 1942 to 409,000 tons in June, 1943.

In June, 1943, it became evident that, in order to keep in operation certain mills producing materials essential to the war effort, it would be necessary to withhold some pulp from integrated operations for shipment to the open market. This step was taken under Order M-93.

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* Presented at the Annual Meeting of the Technical Association of the Pulp & Paper Industry, Hotel Commodore, New York, N. Y., Feb. 14-17, 1944.

[1] Chief of Pulp Allocation, Forest Products Bureau, WPB, Washington, D. C.

Current

The period of critical shortage began in the early summer months of 1943 and has become intensified over the past few months. The policies which have become crystallized during the allocation for the first quarter of 1944 were gradually formulated during the year 1943.

As the supply situation continued to become more difficult during the summer of 1943 it became evident that a closer control of wood pulp use would become necessary. Therefore a new form WPB-2973 was issued on which every producer of paper was required to report monthly furnish data covering proposed paper and paperboard production for the succeeding month. These forms were carefully analyzed in making monthly allocation to individual mills.

These first WPB-2973 forms were based on paper grade classifications taken from the Census Classification on WPB-514, however, and were in many cases inadequate. Therefore, in November, 1943, a new WPB-2973 was drawn up. The paper classifications used were improved and end user information was added. These new forms were put on a quarterly basis. Up to the present time, this information on end use has been used mainly for the purpose of aiding the Requirements Committee of the War Production Board in analyzing the relative distribution of the paper and paperboard produced in the different segments of the industry. However, due to the curtailment of production and the increasing demands for paper and paperboard for direct and indirect war purposes, we must not lose sight of the fact that the data on end use may become an increasingly important factor in the determination of allocations to individual mills.

In the fall of 1943, also, the Pulp and Paper Division was reorganized into two new Divisions and two new Offices; namely, the Paper Division, the Pulp Allocation Office, and the Office of Pulp Production. This latter office was delegated to handle the production of pulpwood. The old Fibrous Materials Section of the Pulp and Paper Division became the Office of Pulp Allocation. All of the new offices and the divisions, as well as the Lumber and Container Divisions were put directly under Mr. Harold Boeschenstein, Chief of the Forest Products Bureau.

On December 1943 estimates as to domestic production, imports, and exports of wood pulp for the first quarter of 1944 were received by the War Production Board. At the same time estimates of proposed use of each type of fibrous material in the production of paper and paperboard and nonpaper products for the first quarter of 1944 were received. It was evident when the supply of and demand for fiber were considered that new supply would fall far short of proposed use.

On December 13 the overall Requirements Committee of the War Production met to consider the situation in regard to paper production for the first quarter of 1944. This is the same Requirements Committee that determines the allocation of steel, aluminum, copper, or any other important material, deemed critical by the War Production Board. At this time recommendations as to the quantities of pulp required to produce the required amounts of each major grade of paper and an estimate of pulp available for first quarter use were presented by the Forest Products Bureau to the Requirements Committee together with an analysis of the underlying wood situation. Estimates of fiber requirements were based to some extent on the use of an increased amount of waste paper in practically every segment of the industry. Some of the elements taken into consideration in preparing this report to the Requirements Committee were:

a. Summaries of end-user information condensed from WPB-2973.
b. Proposed production of paper and paperboard as reported for the first quarter.
c. Historical trends in paper production.
d. Requirements of Claimant agencies, namely Civilian Supply, War Department, Navy Department, and War Foods Administration.
e. Estimates of various types of pulp available for consumption.

Pulp Allocation

At this point I should clarify the reasons for handling pulp allocations and paper production, by segments. During 1943 each branch of the industry, whether board, containers, tissue, or bookpaper was trying to secure for itself the largest share of the dwindling suply of pulp. Each group wanted to get as much as possible without sufficient regard to the effect on other segments of the industry. There can be no criticism attached to this normal reaction, but it became evident that a proper distribution of available pulp supplies could be made only by judging the relative importance to the war economy of each branch or segments of the industry be directed completely to the task of making the maximum contribution to the war effort.

The Requirements Committee determined the production program to be authorized based on the recommendations of the Forest Products Bureau and authorized the use of given tonnages of pulp for the production of paper and paperboard in each major segment of the industry. The problem of how to distribute this tonnage equitably among individual mills was then left to the Pulp Allocation Office.

While it is fair to state that no general overall statement of fixed policy applicable arbitrarily to each segment was followed, there are certain general policies which are common to many of the allocations. The extent to which each of these policies may have governed allocations in a particular segment is a matter of degree depending in large part upon the peculiar character of the problems involved in each segment. However, principles of such general application as to be worthy of special note here are outlined below. These general principles are:

General Principles

1. Paper and paperboard mills producing no woodpulp or using no waste paper or other supplementary fibrous material should be allocated sufficient market wood pulp for the production of essential papers which could not be produced in other mills. This is highly desirable because some of these mills are producing types of paper and paperboard which cannot otherwise be produced in sufficient quantities to meet war and essential civilian needs and such pulp allocation is necessary to insure satisfaction of those needs.

2. Partially integrated mills should as far as possible be allocated sufficient market wood pulp to enable them to utilize all the pulp which they produce with the exception of such quantities of their own pulp as may be withheld by the War Production Board for diversion to nonintegrated mills.

The reasons for allocating wood pulp to partially integrated mills are:

a. Such mills do not produce enough pulp to maintain practicable minimum operating rates on their paper or paperboard machines.
b. The manufacture of most types of paper and paperboard require the blending of several different types of pulp only one of which is, as a rule, produced in a partially integrated mill.
c. Hence, the allocation of additional pulp is a means of maximizing production of pulp and paper, avoiding loss of operating capacity and securing the desired types of product in the tonnages required.

3. Paper and paperboard mills with waste paper or rag conversion plants should be allocated sufficient market wood pulp to enable them to utilize the maximum capacity of their waste paper or rag processing equipment.

In order to meet the war and essential civilian requirements of paper and paperboard with the reduced supply of wood pulp now available, it is necessary to ensure the maximum production and use of waste paper, rags and all other suplementary fibers suitable for the production of the types and quantities of paper and paperboard required.

4. Pulp was diverted from wholly integrated and semi-integrated mills to nonintegrated mills in sufficient quantities to enable the nonintegrated mills to continue in operation, provided that such diversions did not jeodardize the operations of the integrated mills or their production of the necessary quantities of certain types of paper and paperboard required to meet war and essential civilian needs. The diversion of pulp from integrated mills is justified since it enables the War Production Board

a. To spread equitably integrated and nonintegrated mills the burden of fulfilling the wood pulp requirements of Army Ordnance, Lend-Lease, and the Office of Economic Warfare.
b. To preserve in operation as going concerns the maximum amount of facilities for production of paper and paperboard items.
c. To prevent the undue hardships to individual mills which would result from the closing of operations of their inability to obtain pulp.

The war effiort and the public interest are best served by maintaining the flow of paper and paperboard from these mills through their normal channels of distribution. The distribution of substantial quantities of paper and paperboard to many essential end-uses depends upon a complex existing relationship between the nonintegrated mills, their channels of distribution, and the ultimate consumer. Any disruption of this relationship, such as could inevitably result from the shutting down of the producing mills would require the redistribution of the entire paper business of the country and involve the War Production Board in almost unsurmountable problems.

Many of these mills are located in small communities which are largely dependent for their economic welfare on the continued operation of these enterprises.

Wood Pulp Supply

At this point I would like to depart from a discussion of policy and give you a few comparative figures on wood pulp supply in 1942, 1943, and on waste paper supply in 1943. Production of wood pulp dropped from 10,461,000 tons in 1942 to 9,281,000 tons in 1943. Consumption dropped to 10,784,000 from 11,109,000. Year end inventory dropped to 430,000 from 870,000 or a drop of 50% from the 1942 level. Waste paper inventories dropped from 543,000 tons on January 1, 1943 to 249,000 tons on December 31, 1943.

It is impossible on the basis of present information to make accurate predictions for the future supply of fiber for paper and paperboard manufacture. The following may be said, however.

For the first quarter of 1944 the domestic mills have estimated that they will produce 2,568,000 tons of wood pulp. Based on our past experience, however, we know that this figure is too optimistic.

The Canadian government has undertaken to supply the United States with 1,105,000 tons of wood pulp during 1944 or approximately 92,000 tons per month. Unfortunately, for reasons which are well known to you shipments from Canada have not been made during January and the month of February to date at this rate. The War Production Board is confident, however, that the Canadian government will make good its undertaking to supply the United States with the agreed 1,105,000 tons of wood pulp during 1944.

For the first quarter of 1944 the War Production Board has authorized the use of 2,779,000 tons of wood pulp for the production of paper, paperboard, nonpaper products, and for export.

It is not possible at this time to predict the extent to which this level of wood pulp consumption may be maintained at the expense of further reductions in our inventories of pulpwood and wood pulp nor it is possible to tell you now how much wood pulp will be authorized for consumption and export during the second quarter of 1944. The program determination for the second quarter will, however, be made after careful analysis of the most recent data covering production, imports, consumption, exports and inventories of wood pulp and pulp wood. Preliminary indications are that estimated domestic production of wood pulp for the second quarter will be about the same as for the first quarter.

We do not know that the Southland Paper mill at Lufkin, Texas, is completed and in February is starting shipment at the rate of several thousand tons per month of unbleached sulphate to the open market. We hope that the St. Regis Paper Company's mill at Tacoma, Washington, will be in operation by April 1st and will supply between 7,000 and 8,000 tons of sulphate pulp to the market.

Collections of waste paper are improving in response to the pressure of the present salvage and publicity campaign. How much farther this improvement may go remains to be seen.

The War Production Board hopes that enough wood pulp and supplementary fiber will be available to keep all mills in operation during the second quarter of 1944. This can only be done if the greatest efforts are made on the part of all mills to increase wood pulp production and waste paper collection and if the greatest possible economies are exercised in the use of all fibers suitable for papermaking.

The WPB has finally recognized the essentiality of the pulp and paper industry. It is committed to a policy of increasing the supply of pulpwood, wood pulp, and waste paper but it will take time to bring about this increase in the supply of these raw materials.

In the meantime, you who are responsible for the technical development of the industry and for the production of paper and paperboard should see to it that plans are made to utilize more waste paper and supplementary fiber so that in spite of the wood pulp shortage, the paper and paperboard industry will meet the war and essential civilian requirements of the country.

Dirt in Wood Chips*

TAPPI Suggested Method T 14 sm - 44

Material such as bark, black knots, red knots, pin knots, and pitch are always associated with the wood chips prepared for pulping, and their presence, accidental or natural, leads to dirt in the finished pulp. The bulk of this foreign material, or "dirt", cannot be readily avoided except by hand cleaning, since knots and pitch are an inherent part of the wood itself. However, a particularly objectionable material in the production of clean pulps is bark, and this can generally be traced to difficulties of operation in advance of the chipper. Consequently, the results obtained through frequent inspection of chips will form a basis for controlling the barking operations.

Furthermore, since there must be some relation, even though it may be difficult to define numerically, between the dirt count of chips and the dirt count of pulp, a material increase in the latter with no appreciable increase in the former indicates some other source of dirt during the manufacture. In this manner sources of dirt in the pulp which are not traceable to the wood can be sought out and the proper steps taken toward their elimination.

The method herein described provides a uniform basis for obtaining results indicative of the dirt content of wood chips.

*This method is suggested by the Fibrous Materials Testing Committee as being the most suitable to date. It is not, however, a TAPPI Standard. Criticisms are earnestly requested and should be sent to R. G. Macdonald, Secretary, Technical Association of the Pulp and Paper Industry, 122 E. 42nd St., New York, N. Y. Reprints of this method may be obtained from the Secretary at 25 cents each.

Apparatus

1. *Container,* tightly covered, of approximately 5 gallons capacity.
2. *Balance or Scale* of not less than 5000 grams capacity, with a sensitivity of 1 gram at full load.
3. *Balance or Scale* of about 1000 grams capacity, sensitive to 0.1 gram.
4. *Covered Containers* (light in weight). Six or more suitable for collecting the various kinds of dirt.
5. *Sorting Table* having low rims on the two long edges and of sufficient size to give an area of approximately 19 square feet. A suitable size is 2½ by 7½ feet.

Test Specimen

The test specimen shall be sufficient screened chips

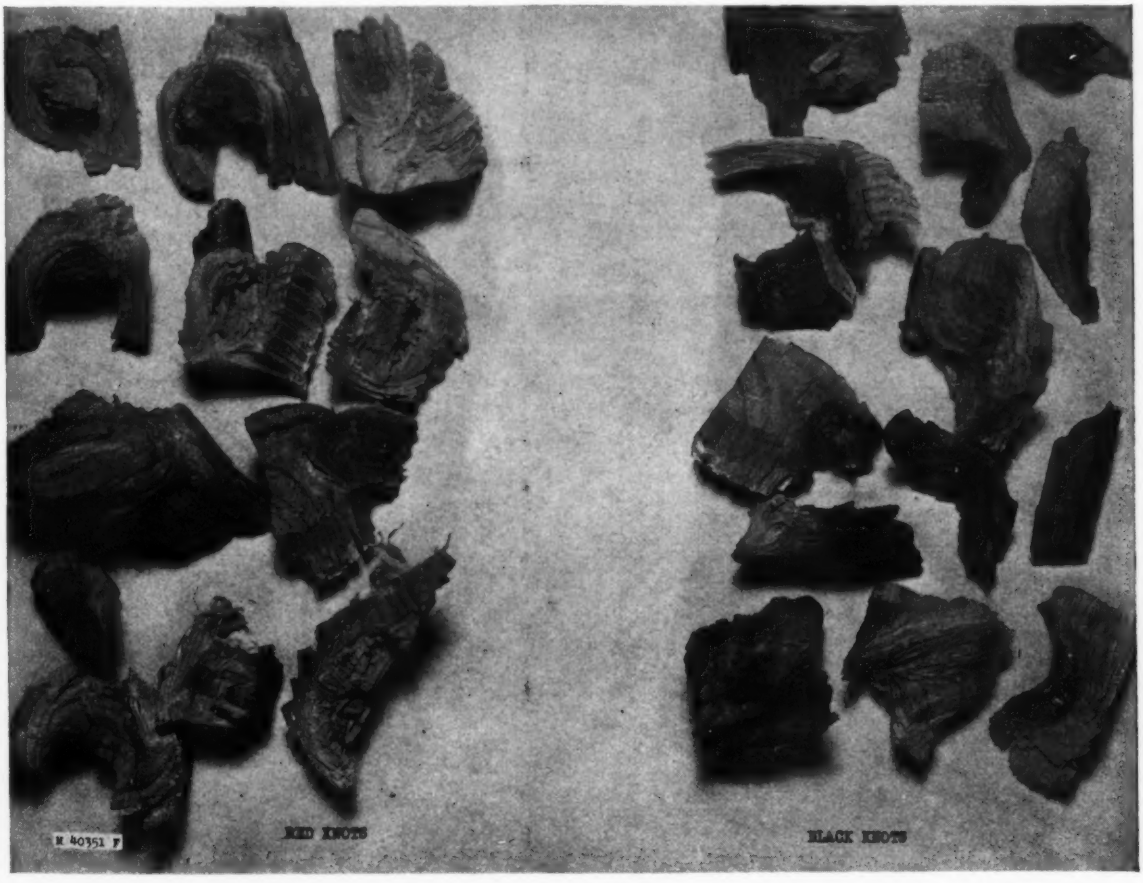


FIG. 1
Photographs of Red and Black Knots in Englemann Spruce

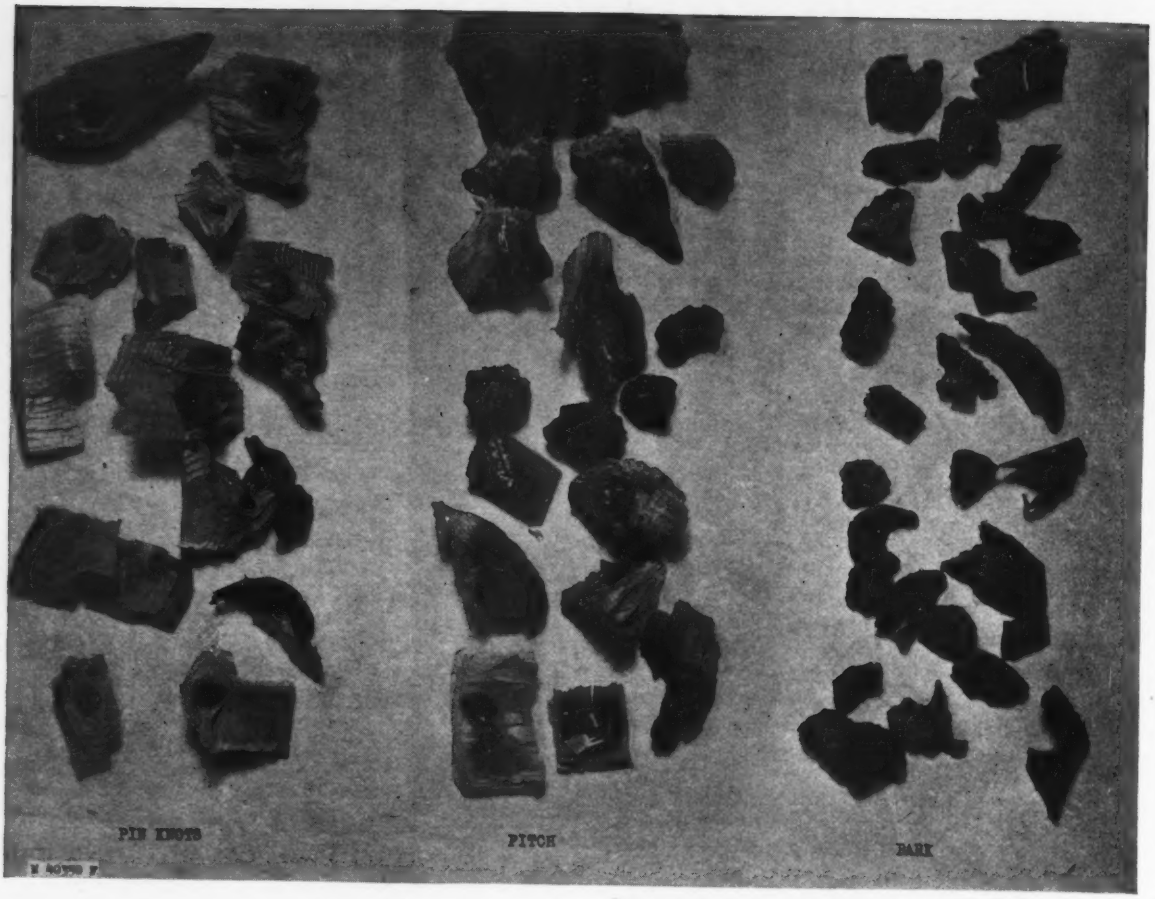


FIG. 2
Photographs of Pin Knots, Pitch, and Bark in Englemann Spruce

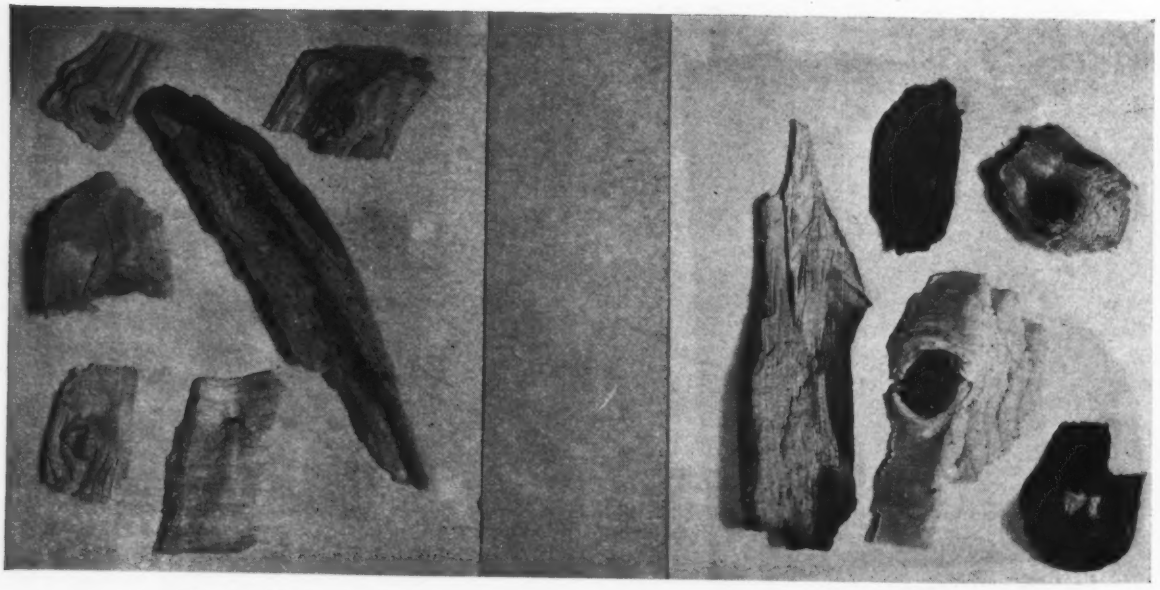


FIG. 3
Photographs of Red and Black Knots in Western Hemlock

PIN KNOTS BARK BLACK BARK (Some Pitch)

FIG. 4
Photographs of Pin Knots and Bark in Western Hemlock

to fill the 5-gallon container and shall be obtained by suitable mechanical or hand sampling methods from the chip conveyor leading from the screens to the storage bins or from the chips as they are introduced into the digester. If the sample removed is larger than that required to fill the 5-gallon container, it shall be mixed and quartered by standard sampling procedure until of proper size. The sample shall be representative of the lot of material passing by the sampling device during the period of sampling.

Procedure

Fill the 5-gallon container with the chips and weigh to the nearest 5 grams. Spread the chips on the sorting table. Pick out the bark, pin knots, black knots, red knots and pitch, placing each in the small container reserved for that type of dirt. (*See* Figures 1 to 4.) Select only dirt that will pass through the pulping process into the finished pulp. Do not include, for example, a hard knot which would not be reduced to pulp and consequently be screened out. Where there is any reasonable doubt as to this, classify the material as dirt. Every chip containing embedded foreign dirt shall be weighed as dirt.

Weigh each of the collected samples of dirt to the nearest 0.1 gram and calculate to percentage of the original sample.

Report

Report to two decimal places the percentages of bark, black knots, pin knots, red knots, and pitch, respectively.

Reference

Osborne, W. M., "The Dirt Content of Chips," *Paper Trade J.* 97, No. 1:40 (July 6, 1933).

Additional Information

The effect of the various kinds of foreign material originating in pulpwood chips upon the dirt count of bleached and unbleached pulp has been determined on an experimental scale. These figures have not been correlated to mill scale; nor, due to the influence of so many factors introduced by mill practice, is it likely that they ever will be. They are, however, of value, since they do give a definite indication of the relative effects of the different types of dirt.

This relationship as determined by experiment is shown in Table I.

TABLE I.—RELATIVE EFFECT OF TYPES OF DIRT

Type of Dirt in Chips	Relative Penalty Factor for Unbleached Pulp	Relative Penalty Factor for Bleached Pulp
Bark	66	44
Black knots	6	16
Pin knots	2	2
Red knots	2	2
Pitch	1	1
Sawdust (not determined as dirt in above procedure)	1	1

For those who desire the figure, the above factors may be used to calculate a "corrected" dirt rating. To obtain this figure, multiply the percentage of each type of dirt by the penalty factor above and add the products. The sum will be the "corrected" dirt rating.

Photographs of typical specimens of the various kinds of dirt are shown in Figs. 1 to 4. The photographs of Englemann spruce were furnished by C. E. Hrubesky of the U. S. Forest Products Laboratory and those of Western hemlock by R. S. Hatch of Weyerhaeuser Timber Co.

In some cases the distinction between red and black knots in spruce is not well marked, the so-called black knots being a darker red than the so-called red knots. It may be more desirable in such cases to classify the knots as light and dark.

In the cases of western hemlock, it is very difficult to show the evidence of pitch. Although usually in encased black knots, pitch occurs to some extent around the encased knot and this usually appears along with the so-called black bark.

Reports Container Board Shortage

WASHINGTON, D. C., April 5, 1944—Shipping container shortage was shown at a recent Industry Advisory Committee meeting to be the most pressing problem of the Glass Containers Manufacturers industry the War Production Board said today.

IAC members stressed the point particularly in relation to fiber shipping containers. Carton shortage, in the glass container field as elsewhere, is due to the shortage of waste paper pulp and wood pulp for container board, in view of the heavy demands upon it for military shipping containers.

Your Waste Paper Situation*

By H. M. Faust[1]

It is genuine pleasure to be with you today, because this will give me an opportunity to personally thank many of you who I know are giving generously of your time, trucks, and manpower in this very difficult salvage operation in which we are engaged. I hope before I get through if there are any who are not giving generously that I can sell them on the need for doing it, and perhaps they will be glad to cooperate, too.

At the present time waste paper is flowing into the mills at the rate of about 560,000 tons a month. It has increased from less than 500,000 tons a month in September to this figure I have just given you of 560,000 tons which is a preliminary figure for January. Like the war, we are headed in the right direction but we have a long way to go before we reach our objective because we need approximately 667,000 tons a month if we are to meet war and essential civilian requirements. That is at the rate of 8,000,000 tons a year. The January collection figure is the highest collection figure since May of 1942, but it is a merry race to keep ahead of consumption, because the faster we collect waste paper, the faster the mills use it. The orders on hand are such that it will tax the capacity of every citizen in the United States and our collection facilities.

There is one very encouraging thing and that is the inventory is going up. When you see an inventory going down it spells just one thing, that there will be mills down or mills running three or four days a week which should be running six days a week. It also means a manpower problem because it is not reasonable to expect a man to come to work in the morning not knowing whether he will have a full day's work and when he goes home after seeing the lack of inventory wondering whether he will have a job the following day. In a situation of that kind the man is likely to go to some other industry where he knows he will have six full days of work a week, and for that reason it was encouraging to see the inventory take an up turn. The job we have is to keep it going up and to see that we are in a position to furnish enough material to the mills so they can keep up with their orders.

Publicity

I think you would be interested in knowing of the forces that are at work to secure this waste paper. First are the newspapers who were asked by Donald Nelson to help solve this problem much in the same manner as they did a year ago in the iron and steel shortage. They have done a magnificent job, they are still doing a fine job, and I know they will continue to do it. You cannot buy the space that they are giving to educate the public to an appreciation of the seriousness of the waste paper problem because it is editorial space. You know the extent to which they have curtailed their operatons through an insufficient supply of paper, and yet they are giving very liberally of their space. I could not even approximate the figure it would cost if it were possible to buy it. It would be a staggering sum, beause I know of no newspaper in the United States, either daily or weekly, that is not cooperating with our local salvage committees to keep people sold on the seriousness of this problem.

The magazines are also contributing very liberally of their space in order to acquaint their readers with the seriousness of the situation. The comics are also important because we are using child labor, if I may put it that way. Boys and girls have been giving very generously of their time and effort. The comics have a circulation of some twenty million copies and are doing a great job in taking the children's heroes of one kind or another and using them to help in the effort. They are having continuity, some even an eight-page continuity in comic books to sell the children on doing their part. Then there are the trade and industrial papers which are doing a great job and are planning to do even more. The fraternal and labor publications are contributing liberally of their space.

Radio, which stemmed the tide when it was going down so fast, stepped up their allocation of time to us in October and it is estimated that to date the programs that have talked about waste paper and the general paper situation have cost their sponsors well over a million dollars. Many of you have heard those programs. We have considerable more time coming in the weeks and months ahead from that source.

The motion picture industry is contributing very liberally. We have trailers on the newsreels in 16,000 of the first and second run motion picture houses, and some 4000 others that are running double features with an estimated audience of forty million people.

Posters are everywhere urging the people to save their waste paper and not burn it, to segregate it so it does not get in with the trash so that it may be salvaged. From a publicity standpoint, all these activities are probably as great an effort of educational character as has ever taken place in salvage work.

Committee Organization

There is an unseen force which perhaps you see locally, perhaps not, but the Salvage Division has in its general branch a group in various regions that are working with over 17,000 volunteer committees. There is scarcely a community in the United States of any consequence that does not have a volunteer salvage committee. We have a membership of well over 400,000 people, and they in turn are working with public spirited organizations, all engaged in salvage work.

Among those who are helping are the school children, hundreds of thousands of them, the Boy Scouts, Girl Scouts, 4-H Clubs, the American Legion, Junior Chambers of Commerce, Junior Commandos, and numerous others which I shall not take the time to mention. In the aggregate they represent a very large segment of our population who are all engaged in

* Presented at the Annual Meeting of the Technical Association of the Pulp & Paper Industry, Hotel Commodore, New York, N. Y., Feb. 14-17, 1944.

[1] Director of Salvage Division, WPB, Washington, D. C.

this salvage work so that we have these forces at work on collection in addition to publicity.

Then there is the industrial branch. There are in the United States approximately seven hundred of what we call industrial center operation committees. Some of you may be serving on those committees already. They are organized so that the salvage managers in the various industrial areas will get together to devise better ways and means of salvaging the things we need. In this particular instance paper is the critical material. They are making a great contribution. It has been interesting to see the industrial organizations who did a very fine operation on iron and steel and nonferrous metals but did not take the waste paper matter seriously. I have in mind one of our very large institutions whose salvage manager is so good he is written up very frequently and his methods given wide publicity, yet we found that they were burning as much as 70 tons of paper in just one of their plants every month. That is no longer true now.

Railroads were the same way. They have done a magnificent job on iron and steel, but I know of one railroad which in July of last year turned over only 50 tons of paper but in December turned over 350 tons. Another turned in 100 tons of paper only a few months ago and is now giving over 400 tons a month. As you know, the railroads are a great potential source of waste paper.

City and Government Collections

Many cities are doing exceptionally good jobs on collection, because that is the bottleneck. In New York it is estimated that the combined efforts of the newspapers, the War Production Board organization, the dealers, the mills, the city officials, and many other organizations are turning in waste paper at the rate of 15 pounds per capita per month. A great city like this, with all its households, office buildings, hotels, and great sources of supply of waste paper, should turn in a larger quota than that. Though I say that the quota for New York should be larger, New York is nevertheless doing a great job. Frankly, if we could get 10 pounds per capita per month from all of the 132 million people in the United States, we would get the 667,000 tons a month which we need. It can be done.

Chicago recently gathered together an organization that is about as fine an example of harmonious cooperation as I have witnessed in many a day. Again, newspapers, War Production Board, mills, the dealers, the city officials, together had a drive that got in 5000 tons of paper in a single day. It meant the use of 700 trucks, 3500 workers, and tremendous planning, hard work, and publicity.

Cincinnati had a drive using 300 trucks, 3000 workers and collected over 2000 tons of paper, and so it goes all over the United States. Small towns where there are no dealers have committees that have shown the ingenuity to find a place and an outlet. Mills have taken the paper from them after they have gotten the carload. Some school children have raised as much as $600 a month for things they use in school, for giving to the Red Cross, to the USO, and numerous other war agencies.

Of the different sources of supply, the household industry, office buildings, hotels, laundries, all have been organized. In the Government which is sometimes pretty severely criticized, progress has been made. Before I came out of industry and went to Washington I heard plenty of criticism, and I had contacts all over the country with which my work kept me in touch. There are just six branches out of the many in Government which in the last six months of last year salvaged over $1,000,000 of waste paper. Of course, the Army with all its camps and with the tremendous amount of material going in there with food, medical supplies, and other things, led in that very fine effort.

Collection Problems

The thing we want to do is to create a more efficient operation on the collection end. Many people are just beginning to take this thing seriously. They remember the old waste paper drive where ultimately they obtained so much that some of it had to be burned and they think about that relatively small percentage that had to be burned but fail to think about the very large percentage that served the purpose for which it was collected.

That was nobody's fault. Mills had cancellations at a critical moment. In the meantime the paper collection reached its peak. There were no warehousing facilities and there were not enough cars to put it in. It is not a commodity that you can store outside very well.

Activities of Salvage Division

I want to mention very briefly some of the work of the Salvage Division because we not only have this paper problem but also the problem of iron and steel. As long as the war lasts we will need a plentiful supply of iron and steel so that our boys on the fighting fronts, whether on land, sea, or in the air, will have a plentiful supply of ammunition and equipment to keep up the pressure they have been putting on so effectively.

That is a job in itself, because we have had to expedite the flow of approximately 2,000,000 tons of iron and steel scrap of the kind we need—not alloy, which is confused with the heavy melting carbon scrap—to keep our mills supplied, because pure scrap is a very important part of our steel production.

Then we have the tin problem because as you know our tin supply is very largely in the hands of the Japs. It might interest you to know that there are about 20,000 tons of tin cans salvaged each month. People say to me, "I know, but isn't only about 1% of the can tin?" That is right, it is, but we obtain enough tin from those cans to make approximately 2 billion No. 2 cans a year. When you stop to think of the importance of the preservation of food not only for our overseas forces but for home consumption, I think you will agree that that is a very worth-while operation.

Likewise we save 98% plus of the perfectly good carbon steel that is in the can. In fact, we are salvaging more iron of a desirable type for steel in tin cans than we are getting from the battlefronts. Many people think we are getting a tremendous tonnage from the battlefronts, but I can tell you we get more iron and steel scrap from the tin cans than we get from that source.

Cooperation

After the public is educated to saving paper, preparing it, separating it, then it becomes the obligation of men like yourselves, the dealers, and the War Production Board to see that it is collected. That is where you come in; that is where we come in. Many of you are already giving generously of your trucks.

I know that. You are helping in many ways in these local salvage drives but if we are to get this extra tonnage, this extra 100,000 tons that we are not getting today and which we should be getting, we are going to need the effort of every citizen in the United States. We are going to need every member of industry to cooperate in getting this paper in.

I am going to ask you, therefore, if you have not already done it, to appoint a salvage manager for your own organization. It is amazing what some of the people in the paper business have found out after they have put in a salvage manager and an executive has gone around to some of the storerooms and found old promotion material that will never be used again, the old trade and technical papers that you will never refer to again, the old checks that are away beyond the period where they will ever serve a useful purpose. It is amazing the tonnage that I have heard some people in the paper business have gotten out of these storerooms.

The other thing is one I mentioned earlier, of continuing to give liberally of your trucks in the local salvage effort.

We like to look upon the Salvage Division as one agency in government that can accumulate or secure, if you want to put it that way, more raw material, raw material that might be wasted or destroyed, than any other. If we can do that we can help to make our problem less acute. There are a good many departments of Government who, because of sheer necessity, have to tell you what you cannot do. I know that has been a source of annoyance. The only thing is, that it is necessary in order to be fair to everybody.

In this Division if we all put our shoulder to the wheel and work hard enough, we can collect a lot of raw material which would otherwise be destroyed. To the extent that we get it, to that degree it is going to make our problem less acute, so we are one Division that need not be bashful about asking for cooperation. But in asking for cooperation I want to say that this job we have of getting the waste paper we need to substitute for wood pulp is a difficult job. It is not an impossible job, however, for it is possible to salvage over 1,000,000 tons of waste paper a month. There is terrific tonnage going abroad taking over our food supplies, our medical supplies, protecting all of the shells that cannot under any circumstances be damaged without endangering the lives of the men using them. That tonnage will never come back; there is a lot of paper that won't come back but there are 1,000,000 tons in the United States which can be salvaged.

I pledge to you the wholehearted support of the War Production Board Salvage Division with every facility we have. But keep in mind that is largely a volunteer effort. We do not have the necessary manpower. We do not own the trucks to collect it. We have to ask the public for their help. We have to ask industry to do this job for us. But to the best of our ability we will see that the public are educated to doing it, and then if you men will continue to give of your time, your effort, and help these local salvage committees, we can get the job done.

If you are not already members of those committees, I hope you will get acquainted with the chairman of your local committee and offer your services. You men can put a punch into their meetings and visualize the seriousness of this thing as no one else can.

The Chemistry of Cellulose

John Wiley & Sons has just issued a book that will be recognized as a classic in its field, the 600 page Chemistry of Cellulose by Emil Heuser of the Institute of Paper Chemistry. This volume is a compendium and critical digest of the literature with due consideration to microscopic and submicroscopic structure of the cellulose fiber. Emphasis is placed on the scientific aspect rather than the practical application of cellulose chemistry. It was written from the standpoint of presenting the subject matter in a scientific and simple manner to the student who is looking for guidance and who expects to find an unbroken and coherent treatise, rather than a number of individual and loosely connected chapters.

The subjects covered include: Morphology of the fiber and composition of the cell walls, reactions of cellulose with water, aqueous alkalies, organic basis, ammonia and concentrated salt solutions; the action of cuprammonium hydroxide on cellulose; cellulose, ethers, xanthates, esters, oxidation of cellulose, decomposition by acids, heat and biological processes, chain structure and molecular weight.

Based on the author's 30 years specialized training and teaching practice, as well as his vast industrial experience this book offers a wealth of essential chemical information. It is timely and meets a real industrial need.

Copies may be obtained at $7.50 per copy from the Book Department of the Technical Association of the Pulp and Paper Industry, 122 E. 42nd street, New York 17, N. Y.

Chemistry of Synthetic Substances

An interesting 103-page book entitled The Chemistry of Synthetic Substances by Emil Dreher (translated from German by Marion Lee Taylor), has been published by The Philosophical Library. It is essentially a survey of the principal questions of macromolecular chemistry, such as rubbers, resins and cellulose. The chemistry of macromolecular organic compounds rapidly developing in science and industry has up till now been considered in existing literature chiefly in the realm of technical application, especially in so far as it concerns the treatment of high molecular substances. By the synthesis of the diverse macromolecular compounds of which the synthetic substances so desired today consist, the range of problems of organic chemistry has been essentially extended, while the latter has, at the beginning, been unable to keep pace in the solution of the underlying theoretical problems. Among the subjects covered are processes for determining molecular weight and measuring viscosity, film-forming high molecular compounds, polymerization and polycondensation, drying oils.

Copies may be obtained from the Book Department of the Technical Association of the Pulp and Paper Industry, 122 East 42nd street, New York 17, N. Y. at $3.00 per copy.

Kimberly-Clark Profits Up

The Kimberly-Clark Corporation for 1943 reports a net profit of $2,399,626, equal to $3.69 a share on the common stock, compared with $2,185,443, or $3.25 a share in 1942. No provision was made last year for the renegotiation of war contracts.

I am a CLARK FORK TRUCK

A Product of CLARK EQUIPMENT COMPANY

I work 24 hours a day, at home or overseas . . . wherever free men are fighting. I am always behind the lines handling the supplies that keep them fighting.

Our fighting men need all the supplies I handle now . . . I am working full time with our armed-forces to speed Victory.

But, I haven't forgotten the job I am able to do at home.

You can get me to work for you . . . thousands more of my family (we have over 60 members) will soon be available to feed your production lines . . . to save time—to save manpower—to lower costs, that more of your products, whatever they may be, will be available sooner, because I handle everything from the raw to the finished products.

I can work in the factory, yards, warehouse or on the docks.

I handle loads of 1000 to 7000 lbs. like they are as light as ducks' down.

The men and women who control me never know fatigue. . . I do the work. At the slightest urging I am on my way, looking for material to carry, stack or tier. I save plenty of floor space too, by stacking material to the ceiling, and you should see how easy I do it.

Don't forget, like I told you, as soon as I can, when more like me are available, I'll be ready to help you. I'm tough and rough and a glutton for work.

Sincerely,

Clark Fork Truck

P. S. I was built by the Men of Clark and they are a fine lot of Craftsmen.

CLARK TRUCTRACTOR
DIVISION OF CLARK EQUIPMENT COMPANY
BATTLE CREEK, MICHIGAN, U.S.A.

FOR MAXIMUM OPACITY . . .
HIGHER STRENGTH • ECONOMY

Suitable for ALL types of paper ranging from thin printing papers and waxing tissues to coated book and magazine stocks.

UNITANE O-R150 was especially developed for paper pigmentation. Its excellent dispersion in water promotes good retention and excellent sheet formation. As a component of the beater furnish, it produces whiter sheets of great brilliance, and superior printing qualities.

SAMPLES of UNITANE O-R150 will be sent promptly upon request.

UNITED COLOR and PIGMENT DEPARTMENT
CALCO CHEMICAL DIVISION
AMERICAN CYANAMID COMPANY
NEWARK, NEW JERSEY

Calco UNITED

New York Paper and Pulp Market Review

Serious Shortage In Paper Board May Continue For Several Months — Pulpwood Receipts Up 6,872 Cords — Mill Receipts of Waste Paper Are Substantially Below Consumption — Rags Are Active.

Office of the PAPER TRADE JOURNAL,
Wednesday, April 5, 1944.

Wholesale demand for all types of paper and paper products is currently reported heavy. Most of many reports received this week from many manufacturers' representatives, jobbers, and general paper merchants, indicate a tighter supply situation exists in paper board.

The index of general business activity for the week ended March 25, declined to 143.2, from 143.4 for the previous week, compared with 138.2 for the corresponding week last year. The index of paper board production was 145.6, compared with 149.9 for the previous week, and with 148.7 for the corresponding week last year.

The index of paper production for the week ended March 25 was estimated at 90.3%, compared with 90.6% for 1943, 103.4% for 1942, 94.5% for 1941, and 82.6% for the corresponding week for 1940.

The index of paper board production for the week ended March 25 was 97.0%, compared with 95.0% for 1943, with 101.0% for 1942, with 84.0% for 1941, and 67.0% for the corresponding week for 1940.

Commercial printing paper will probably not be further curtailed in the second quarter, from the first quarter supply, the WPB said last week, following an Advisory Committee meeting. It was recommended at the meeting that a questionnaire be sent to all printers in an effort to ascertain accurately the use of paper in the printing and allied trades.

Latest requirements of the WPB, as reported late last week, indicate that the estimated output of paper board will be about 3,987,600 tons in the first 1944 quarter, compared with 4,087,972 tons in the first 1943 quarter. The release states that heavy war demands for containers and the limited supply of wood pulp and waste fibers, necessitates restriction of production and use. Order M-290 (amended) requires manufacturers to set aside 100% of their production. Order P-140, grants preference ratings to consumer of boxes, for war plants and food packers, for the purchase of shipping containers. Order L-317, prohibits the use of container board boxes for specific non-essential items.

WANTED—NEW PRODUCTS

Have you a patented or patentable idea, invention or product dealing with paper manufacture?

We shall be glad to consider with you its production and sales development.

Write Box # 44-216 care
Paper Trade Journal.

A-6

Wood Pulp

Receipts of pulpwood in February, according to the War Activities Committee of the Pulpwood Consuming Industries, showed an increase of only 6,872 cords above January of the current year. Over-all mill receipts for February totaled 1,464,000 cords; Canada supplied 152,000 cords; the Northeast, 115,000 cords; Lake States, 32,000 cords, and the Pacific Northwest, 5,000 cords.

Rags

Demand for new cotton cuttings is active at this date. Mill buying extends to all grades. Prices are strong at ceilings. Supplies are quite widely reported as insufficient to provide the requirements of mills.

Trading in the old rag market is active, with mills absorbing all available supplies. Prices are strong in tone at ceiling levels.

Old Rope and Bagging

No important change has been reported in the old rope market this week. Mill needs for old No. 1 Manila rope are urgent and heavy war requirements absorb all limited supplies.

Trading in the old bagging market continues at a low rate of activity. Supplies are reported limited but buyers show little interest in scrap bagging at this date. Prices are nominal.

Old Waste Paper

Mill requirements for a large tonnage of waste paper continue urgent. Receipts at the mills was somewhat over 10,500 tons short of consumption for the month ending March 11. Prices are strong at ceiling levels.

Twine

No important change in the twine market has been reported this week. Trade demand for all available grades is reported good. Prices are firm and unchanged.

Introduces Waste Paper Resolution

WASHINGTON, D. C., April 5, 1944—Representative Calvin Johnson of Illinois has introduced a House concurrent resolution (No. 76) in the House of Representatives dealing with waste paper. The resolution is as follows;

(1) that every effort should be made to utilize to the fullest extent possible all waste paper in order that essential supplies and services may be maintained during the present war; and

"(2) that the wilful destruction of waste paper is an unpatriotic act seriously interfering with the war effort and of material assistance to the enemies of the United States.

"Sec. 2. The Congress hereby expresses itself as favoring, and recommends to the several States the enactment of, legislation which will make unlawful the wilful destruction of waste paper."

Like Atlantic Convoys, Sabin Robbins always delivers the goods

Like the Merchant Marine that delivers the goods across broad oceans, Sabin Robbins moves your mill jobs and seconds speedily, efficiently and profitably with cross-country NATIONAL DISTRIBUTION. Twenty warehouses and sales offices, located in principal cities, are at your service. Call the nearest one today and let our NATIONAL DISTRIBUTION demonstrate its worth to YOU!

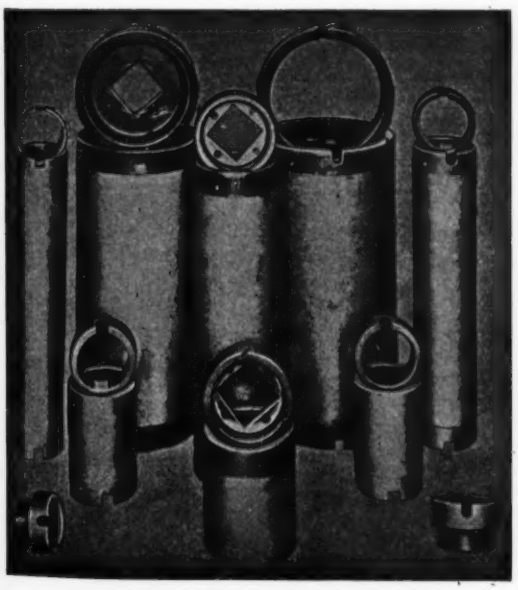
THE **SABIN ROBBINS**

PAPER COMPANY · CINCINNATI 23, OHIO

PURCHASING OFFICES: Detroit 16, Mich., and 41 Park Row, New York 7, N. Y. SALES OFFICES in 20 Principal Cities

NATIONAL DISTRIBUTORS OF PAPER MILL JOBS

Atlanta 3, Ga.	Cincinnati 23, O.	Kansas City 2, Mo.	Minneapolis 1, Minn.	Philadelphia 4, Pa.
Baltimore 2, Md.	Cleveland 4, O.	Los Angeles 15, Cal.	Newark 4, N. J.	Pittsburgh 22, Pa.
Buffalo 10, N. Y.	Dayton 6, O.	Louisville 2, Ky.	New York 13, N. Y.	Rochester 4, N. Y.
Chicago 23, Ill.	Detroit 16, Mich.	Milwaukee 3, Wisc.	Peoria 5, Ill.	



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CAPS

Straight wound paper cores made in sizes from 2" to 10" inside diameter with any thickness wall required.

Long draw protected slot caps of heavy gauge steel in all standard sizes.

Heavy duty caps with reenforced square hole. This patented feature of reenforcement gives added strength and durability.

CORES

Samples of caps or cores will be gladly submitted

ELIXMAN PAPER CORE COMPANY, INC.

CORINTH, N. Y.

MISCELLANEOUS MARKETS

Office of the PAPER TRADE JOURNAL,
Wednesday, April 5, 1944.

BLANC FIXE—Quotations on blanc fixe continue firm and unchanged. Demand is reported fair. The pulp is currently quoted at $40 per ton, in barrels, at works; the powder is quoted at $60 per ton, f.o.b. works.

BLEACHING POWDER—Current demand is active but supply is adequate. Quotations are unchanged. Prices on bleaching powder range at from $2.50 to $3.10 per 100 pounds, in drums, car lots, at works.

CASEIN—OPA maximum prices on processed acid-precipitated casein are as follows: 10,000 pounds or more, 24 cents per pound; 2,000 pounds, 24¼ cents per pound; less than 2,000 pounds, 24¾ cents per pound, f.o.b. shipping point. Imported, 11½ cents per pound, f.o.b. source.

CAUSTIC SODA—Demand continues heavy. Market a little less tight. Prices continue unchanged. Solid caustic soda is quoted at $2.30 per 100 pounds; flake and ground is quoted at $2.70 per 100 pounds; all in drums, car lots, at works.

CHINA CLAY—Quotations on china clay are unchanged. Current demand is reported fair. Domestic filler clay is currently quoted at from $7.50 to $15 per ton; coating clay is quoted at from $12 to $22 per ton, at mine. Imported clay is quoted at from $13 to $25 per long ton, ship side.

CHLORINE—Demand and production reported well balanced. Quotations are unchanged. Chlorine is currently quoted at $1.75 per 100 pounds, in single unit tank cars, f.o.b. works.

ROSIN—Prices on some grades are lower for the current week. "G" gum rosin is quoted at $4.75 per 100 pounds, in barrels, Savannah. "FF" wood rosin is quoted at $4.73 per 100 pounds, in barrels, New York. Seventy per cent gum rosin size is currently quoted at $5.02 per 100 pounds, f.o.b. works.

SALT CAKE—Prices on salt cake are reported unchanged for the current week. Demand is reported moderate. Domestic salt cake is quoted at $15 per ton, in bulk. Chrome salt cake is quoted at $16 per ton. All prices in car lots, f.o.b. shipping point.

SODA ASH—Heavy demand continues for domestic requirements and market is still tight. Quotations continue unchanged. Current prices, car lots, per 100 pounds, are as follows: in bulk, $.90; in paper bags, $1.05; and in barrels, $1.35.

STARCH—Small shipments of corn continues to maintain a tight market situation in corn products. Quotations are unchanged. The pearl grade is quoted at $3.72 per 100 pounds; powdered starch at $3.83 per 100 pounds; all prices in bags, car lots, f.o.b. Chicago.

SULPHATE OF ALUMINA—Demand reported good. Quotations continue unchanged. The commercial grades are quoted at from $1.15 to $1.25 per 100 pounds, in bags, car lots, f.o.b. works. The iron free is quoted at $2.35 per 100 pounds, in bags, at works.

SULPHUR—Quotations on sulphur continue to conform to prevailing market prices. Annual contracts are quotated at $16 per long ton, f.o.b. mines; the price at Gulf Ports is $17.50 per long ton.

TALC—Prices on talc continue unchanged. Demand moderate. Domestic grades are currently quoted at from $16 to $21 per ton, at mines; Canadian at $24 per ton. All prices in car lots.

MARKET QUOTATIONS

All market quotations, excepting those otherwise designated as official OPA maximum prices, are based on the manufacturers' price level as of October 1-15, 1941; maximum wholesale prices are based on the merchants' maximum prices for stipulated quantities at a quoted price to all customers of a like class, as shown by the merchant's sales records of goods delivered during March, 1942. A merchant's price list in effect in March 1942, showing quotations of actual shipments, will establish the current maximum prices.

Paper

(Delivered New York)

News, per ton—			
Roll, contract	*$58.00	@	—
Sheets	64.00	"	—
* OPA Maximum Price.			
Kraft—per cwt.—Carload Quantities Zone A, f.o.b. Mill			
Superstandard Wrapping	*$5.25	@	—
No. 1 Wrapping	*5.00	"	—
Standard Wrapping	*4.75	"	—
Standard Bag	*4.375	"	—
* OPA Manufacturers' Prices.			
Tissues—Per Ream—Carlots			
White No. 1	1.12½	"	—
White No. 1 M. G.	1.10	"	—
White No. 1½	1.00	"	—
White No. 2	.90	"	—
Anti-Tarnish M.F.	1.20	"	—
Colored	—	"	—
Kraft	.95	"	—
Manila	.90	"	—
Toilet—1 M. Sheets—Per Case			
Unbleached	4.25	"	—
Bleached	5.70	"	—
Unbl. Toilet, 1 M.	4.16	"	—
Bleached Toilet	5.70	"	—
Paper Towels, Per Case—			
Unbleached, Jr.	2.20	"	—
Bleached, Jr.	3.20	"	—
Manila—per cwt.—C. l. f. a.			
No. 1 Jute	11.25	@	—
No. 1 Manila Wrapping, 35 lb.	6.00	"	6.25
No. 2 Manila Wrapping, 35 lb.	5.75	"	6.00
Boards, per ton—			
News	*48.00	@	—
Chip	*48.00	"	—
Sgl. Mla. Ll. Chip	*60.00	"	—
White Pat. Coated	*75.00	"	—
Kraft Liners 50 lb.	*63.00	"	—
Binders Boards	84.00	"	116.00

* OPA Base Prices per 10 tons. Less than 10 tons but over 3 tons, add $2.50; three tons or less, add $5; regular 35-39 basis, add $5.; basis 40-49, add $2.50; basis 91-100, add $2.50; basis 101-120, add $5.

The following are representative of distributors' resale prices:

Rag Content Bonds and Ledgers—White, Assorted Items, Delivered in Zone 1:

	Bonds	Ledgers
100% Rag Ext. No. 1	$39.10@$46.00	$40.25@$47.25
100% Rag	32.20 " 37.75	33.35 " 39.25
85% Rag	.... "	29.90 " 35.00
75% Rag	23.00 " 27.00	24.15 " 28.25
65% Rag	.... "	22.80 " 27.75
50% Rag	18.70 " 22.75	19.90 " 24.25
25% Rag	16.40 " 20.00	17.55 " 21.50

Colors at $1.00 cwt. extra.

Sulphite Bonds and Ledgers—White, Assorted Items. Delivered in Zone 1:

	Bonds	Ledgers
No. 1	$10.55@$12.75	$11.70@$14.25
No. 2	9.65 " 11.75	10.80 " 13.25
No. 3	9.20 " 11.25	10.35 " 12.50
No. 4	8.90 " 10.75	10.05 " 12.25

Colors $1.00 cwt. extra.

Free Sheet Book Papers—White, Cased Paper. Delivered in Zone 1:

No. 1 Glossy Coated	$13.65	@$13.3
No. 2 Glossy Coated	12.40	" 14.0
No. 3 Glossy Coated	11.60	" 13.2
No. 4 Glossy Coated	11.15	" 12.7
No. 1 Antique (watermarked)	10.25	" 11.7
No. 2 Offset	9.60	" 11.0
A Grade E. F.	9.35	" 10.7
A Grade S. & S. C.	9.60	" 11.0
B Grade E. F.	8.85	" 10.2
B Grade S. & S. C.	9.10	" 10.5
C Grade E. F.	8.55	" 9.7
C Grade S. & S. C.	8.80	" 10.0
D Grade E. F.	8.25	" 9.5
D Grade S. & S. C.	8.50	" 9.7

Ivory & India at $.50 cwt. extra.

Wood Pulp

OPA Maximum Prices and Canadian Manufacturers Prices, Less Freight Not Exceeding OPA Allowances.

Bl. Softwood Sulphite	$86.00
Unbl. Softwood Sulphite	74.00
Bl. Hardwood Sulphite	83.50
Unbl. Hardwood Sulphite	71.50
Bl. Mitscherlich	81.0
Unbl. Mitscherlich	72.00 @ 82.0
N. Bleached Sulphate	86.00
S. Bleached Sulphate	79.00
N. Semi-Bleached Sulphate	82.0
S. Semi-Bleached Sulphate	75.0
N. Unbl. Sulphate	73.00
S. Unbl. Sulphate	63.50
Bl. Soda	72.00
Unbl. Soda	68.00
Groundwood	50.00

Transportation Allowances

Applying to Producers of Wet Wood Pulp.

	Below 50% Air Dry Weight
Northeast	$13.50
Lake Central	13.50
Southern	16.00
West Coast (in area)	10.50
West Coast (out area)	16.50

	50%-80% Air Dry Weight
Northeast	$11.50
Lake Central	11.50
Southern	14.00
West Coast (in area)	9.50
West Coast (out area)	15.50

Applying to Producers of Dry Wood Pulp.

	Above 80% Air Dry Weight
Northeast	$8.50
Lake Central	8.50
Southern	11.00
West Coast (in area)	7.50
West Coast (out area)	13.50

Should freight charges actually exceed these allowances, the difference may be added to the maximum prices

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—			
New White, No. 1	6.50	@	7.25*
Silesias No. 1	—	"	5.75*
New Unbleached	6.75	"	7.50*
Blue Overall	—	"	5.50*
Fancy	—	"	3.50*
Washables	—	"	3.00*
Bleached Khaki Cuttings	—	"	4.25*
Unbleached Khaki Cuttings	—	"	3.00*

* OPA Maximum Prices.

Better Protection
for Newsprint
with Stanley Car Banding

With newsprint scarce and freight space at a premium Stanley Car Banding is especially useful.

Stanley Car Banding protects shipments and helps them arrive in good condition.

Bulky, expensive bracing is eliminated . . . time required for bracing is cut to a fraction, time used in removing bracing is practically eliminated.

Stanley Steel Strapping, and Car Banding System, include tools and accessories for every type of shipping unit. Write for details.

THE STANLEY WORKS [STANLEY] STEEL STRAPPING DIVISION NEW BRITAIN, CONNECTICUT

BE SURE Your Plans Include *Kalamazoo* Vitrified Glazed TILE Construction *for Stock Tanks and Chests*

Production Savings and Efficiency

Specify the finest material ever developed for paper and pulp mill tanks and chests. The hard, smooth, glazed surface is ideal for machine chests, bleach tanks, and all storage tanks and chests.

Keeps your stock free from rust, chipped, or flaked concrete and is not affected by most chemicals.

Your first cost is your only cost, with no shutdowns for expensive repairs. Why not have the best when your investment is no more than reinforced concrete or 3 inch cypress chests or tanks?

The Kalamazoo exclusive method of construction is easily adapted to any shape or size with round or square ends, midfeathers, fins or agitators and tapered bottoms and rounded corners.

Saves in three ways by—lowering investment—reducing maintenance—and stepping up production.

Ask for Engineering Data

Kalamazoo TANK & SILO CO.
KALAMAZOO - MICHIGAN

Old Rags

White, No. 1—			
Repacked	*3.80	"	—
Miscellaneous	*3.20	"	—
White, No. 2—			
Repacked	*2.90	"	—
Miscellaneous	*2.65	"	—
Third and Blues—			
Repacked	*2.20	"	—
Miscellaneous	*1.80	"	—
Roofing Rags—			
No. 1	*1.55	"	—
No. 2	*1.45	"	—
No. 3 (bagging)	*1.35	"	—
No. 4	*1.35	"	—
No. 5A	*1.35	"	—
Old Manila Rope	5.75	"	—

OPA Maximum Prices.

Foreign Rags

All Prices nominal

New Rags

New Dark Cuttings	2.25	●	2.40
New Mixed Cuttings	2.00	"	2.20
New Light Silesias	5.50	"	5.75
Light Flannelettes	5.50	"	5.75
New White Cuttings	7.00	"	7.50
New Light Oxfords	4.00	"	4.50
New Light Prints	3.00	"	3.25

Old Rags

No. 1 White Linens	7.50	"	8.50
No. 2 White Linens	6.50	"	7.50
No. 3 White Linens	4.50	"	—
No. 4 White Linens	2.25	"	3.25
No. 1 White Cotton	4.25	"	4.75
No. 2 White Cotton	3.25	"	3.75
No. 3 White Cotton	2.50	"	3.00
No. 4 White Cotton	1.90	"	2.20
Extra Light Prints	2.00	"	2.40
Ord. Light Prints	1.75	"	2.15
Med. Light Prints	1.55	"	1.95
Dutch Blue Cottons	2.25	"	2.50
French Blue Linens	3.00	"	—
Checks and Blues	2.00	"	—
Linsey Garments	1.90	"	2.00
Dark Cottons	1.50	"	1.60
Old Shopperies	1.30	"	1.45
New Shopperies	1.45	"	1.50
French Blues	2.25	"	2.50

BAGGING

(Prices to Mill, f. o. b. N. Y.)

Gunny No. 1—			
Foreign	Nominal		
Domestic	4.25	●	4.35
Wool Tares, light	4.25	"	4.50
Wool Tares heavy	4.50	"	5.00
Bright Bagging	4.50	"	4.85
Manila Rope—			
Foreign	—	"	—
Domestic	*5.75	"	—
Jute Threads	5.50	"	—
No. 1 Sisal Strings	*4.00	"	—
Mixed Strings	2.00	"	—

*OPA Maximum Price.

Old Waste Papers

(F. o. b. New York)

OPA Maximum Prices

No. 1 Hard White Envelope Cuts, one cut	3.37½	●	—
No. 1 Hard White Envelope Cuts	3.12½	"	—
No. 1 Hard White Shavings, unruled	2.87½	"	—
No. 1 Hard White Shavings, ruled	2.50	"	—
Soft White Shavings, one cut	2.87½	"	—
No. 1 Soft White Shavings	2.50	"	—
Soft White Shavings, Misc.	2.15	"	—
No. 1 Fly Leaf Shavings	1.67½	"	—
No. 2 Fly Leaf Shavings	1.12½	"	—
No. 1 Groundwood Fly Leaf Shavings	1.25	"	—
No. 2 Mixed Groundwood Fly Leaf Shavings	.90	"	—
Mixed Colored Shavings	.75	"	—
Mixed Groundwood Colored Shavings	.90	"	—
Overissue Magazines	1.67½	"	—
No. 1 Heavy Books & Magazines	1.67½	"	—
Mixed Books	.85	"	—
No. 1 White Ledger	2.17½	"	—
No. 2 Mixed Ledger, colored	1.87½	"	—
New Manila Envelope Cuttings, one cut	2.87½	"	—
New Manila Envelope Cuttings	2.65	"	—
Extra Manilas	1.85	"	—
Mixed Kraft, Env. & Bag Cuttings	2.75	"	—
Kraft Envelope Cuttings	3.25	"	—
Triple Sorted, No. 1 Brown Soft Kraft	2.50	"	—
New 100% Kraft Corrugated Cuttings	2.25	"	—
No. 1 Assorted Old Kraft	1.75	"	—
New Jute Corrugated Cuttings	.90	"	—
Old 100% Kraft Corrugated Containers	1.75	"	—
Old Corrugated Containers	1.15	"	—
Box Board Cuttings	.72½	"	—
White Blank News	1.65	"	—
Overissue News	.85	"	—
No. 1 News	.75	"	—
No. 1 Mixed Paper	.70	"	—
Old Corrugated Containers	.82½	"	—
Mill Wrappers	.85	"	—

Twines

All Prices Nominal

(F. o. b. Mill)

(Soft Fiber)

Coarse Polished—			
India	.21	●	—
White Hemp	.21	"	—
Fine Polished—			
Fine India	.26	"	—
Unpolished—			
Box	.17½	"	—
Paper Makers	.17	"	—
Tube Rope	.19	"	—
Wall Paper	.20½	"	—
Wrapping	.23	"	—
Soft Fiber Rope	.19	"	—
Cotton	.25	"	—

(Hard Fiber)

Medium Java	.18	"	—
Mex. Sisal	.16	"	—
Manila	—	"	—

PHILADELPHIA

Domestic Rags (New)

(Price to Mill.)

Shirt Cuttings—	
New White No. 1	.07¼
New White No. 2	.05¾
Light Silesias	.05¾
Black Silesias, soft	.03¾
New Unbleached	.07½
Washable Prints	.04¼
Washable No. 1	.03
Blue Overall	.05½
Cottons—According to grades—	
Washable shredding	.01¾
Fancy Percales	.04¾
New Black Soft	.03¼
Khaki Cuttings—	
Unbleachable Cotton Cuttings	.03½
Bleachable Cotton Cuttings	.04½
Men's Corduroy	.03½
Ladies' Corduroy	.03
Cottonades	.03¼

Domestic Rags (Old)

White No. 1 — Repacked	3.80	"	—
Miscellaneous No. 1	3.20	"	—
Miscellaneous No. 2	2.65	"	—
White No. 2 — Repacked	2.90	"	—
Thirds and Blues—			
Miscellaneous	1.80	"	—
Repacked	2.20	"	—

Black Stockings—
(Export) ..... Nominal

Roofing Stock—

Foreign No. 1	Nominal		
Domestic No. 1	1.55	"	—
Domestic No. 2	1.45	"	—
Roofing Bagging	1.35	"	—
Old Manila Rope	5.75	"	—

Bagging

(F. o. b. Phila.)

Gunny No. 1—			
Foreign	Nominal		
Domestic	3.00	"	3.50
No. 1 Clean bright—			
Sisal Strings			.04
No. 2 Clean bright—			
Sisal Strings			.03
Sisal Jute	.02½	"	.02¾
Scrap—			
No. 1	3.25	"	3.50
No. 2	1.75	"	1.80
Wool Tares	4.00	"	4.25
No. 1 New Light Burlap	3.00	"	4.00
New Burlap Cuttings	3.75	"	4.00

Old Papers

(F. o. b. Phila)

OPA Maximum Prices

No. 1 Hard White Envelope Cuts, one cut	3.37½	"	—
No. 1 Hard White Shavings, unruled	2.87½	"	—
Soft White Shavings, one cut	2.50	"	—
White Blank News	1.65	"	—
Soft White Shavings, Misc.	2.13	"	—
No. 1 White Ledger	2.17½	"	—
No. 2 Ledger, colored	1.87½	"	—
No. 1 Heavy Books & Magazines	1.67½	"	—
Overissue Magazines	1.67½	"	—
New Manila Envelope Cuttings	2.65	"	—
No. 1 Assorted Old Kraft	1.75	"	—
No. 1 Mixed Paper	.70	"	—
Box Board Cuttings	.72½	"	—
Kraft Corrugated Cuttings	2.25	"	—
Old Corrugated Containers	1.15	"	—
Overissue News	.85	"	—
No. 1 News	1.00	"	—

BOSTON

Old Papers

(F. o. b. Boston)

OPA Maximum Prices

No. 1 Hard White Shavings, unruled	2.87½	●	—
No. 1 Hard White Shavings, ruled	2.50	"	—
Soft White Shavings, Misc.	2.15	"	—
No. 1 Fly Leaf Shavings	1.67½	"	—
No. 2 Fly Leaf Shavings	1.12½	"	—
No. 1 Groundwood Fly Leaf Shavings	1.25	"	—
No. 2 Groundwood Fly Leaf Shavings	.90	"	—
Mixed Colored Shavings	.75	"	—
New Manila Envelope Cuts, one cut	2.87½	"	—
Hard White Envelope Cuts, one cut	3.37½	"	—
Triple Sorted No. 1 Brown Soft Kraft	2.50	"	—
Mixed Kraft Env. & Bag Cuttings	2.75	"	—
Kraft Envelope Cuttings	3.25	"	—
No. 1 Heavy Books & Magazines	1.67½	"	—
New Manila Envelope Cuts, one cut	2.87½	"	—
New Manila Envelope Cuttings	2.65	"	—
White Blank News	1.65	"	—
No. 1 Assorted Old Kraft	1.75	"	—
No. 1 Mixed Paper	.70	"	—
Overissue News	.85	"	—
Box Board Cuttings	.72½	"	—
New Corrugated Cuttings, Kraft	2.25	"	—
Old 100% Kraft Corrugated Containers	1.75	"	—
Old Corrugated Containers	1.15	"	—
Jute Corrugated Cuttings	1.07½	"	—

Bagging

(F. o. b. Boston)

Gunny Bagging—			
Foreign	(nominal)		
Domestic	3.25	●	—
Sisal Rope No. 1	*4.75	"	—
Sisal Rope No. 2	*4.25	"	—
Mixed Rope	2.00	"	—
Transmission Rope—			
Foreign	(nominal)		
Domestic	2.75	"	3.00
Manila Rope—			
Foreign	(nominal)		
Domestic	5.75	"	—
Soft Jute Rope	5.25	"	—
Jute Cut Threads	3.00	"	3.50
Bleachery Burlap	8.50	"	9.00
Scrap Burlap—			
Foreign	(nominal)		
Domestic	3.50	"	—
Wool Tares—			
Foreign	(nominal)		
Domestic	4.25	"	—
Aust. Wool Pouches	3.75	"	4.00
New Burlap Cuttings	4.75	"	5.00
Heavy Baling Bagging	4.00	"	4.25
Paper Mill Bagging	2.50	"	3.00
No. 2 Roofing Bagging	1.35	"	—

*OPA Maximum Price.

Domestic Rags (New)

(F. o. b. Boston)

Shirt Cuttings—			
New Light Prints	.04½	●	.04¾
Fancy Percales	.04¾	"	.05
New White No 1	.06¾	"	.07
New Light Flannelettes	.05½	"	.06
Canton Flannels, Bleached	.06	"	.06½
Underwear Cutters, Bleached	.06¼	"	.06½
Underwear Cutters, Unbleached	.05¾	"	.06
Silesias No. 1	.06	"	.06½
New Black Silesias	.03	"	.03¼
Red Cotton Cuttings	.03½	"	.04
Soft Unbleached	.06½	"	.06¾
Blue Cheviots	.05½	"	.06
Fancy	.02¾	"	—
Washable	.02¾	"	—
Khaki Cuttings	.02¾	"	.03
O. D. Khaki	.03½	"	.03¾
Corduroy	.03¼	"	.03¾
New Canvas	.06¼	"	.06¾
B. V. D. Cuttings	.06¼	"	.06¾

Domestic Rags (Old)

(F. o. b. Boston)

White No. 1—			
Repacked	3.80	●	—
Miscellaneous	*3.20	"	—
White No. 2—			
Miscellaneous	2.65	"	—
Twos and Blues, Repacked	2.20	"	—
Old Blue Overalls	2.25	"	2.50
Thirds and Blues, Repacked	2.20	"	—
Miscellaneous	1.80	"	—
Black Stockings	3.50	"	4.00
Roofing Stock—			
No. 1	1.55	"	—
No. 2	1.45	"	—
No. 3	1.35	"	—
No. 4	1.35	"	—
No. 5, Quality A	1.35	"	—
Quality B	1.20	"	—
Quality C	.95	"	—
Old Manila Rope	5.75	"	—

*OPA Maximum Prices.

Foreign Rags

(F. o. b Boston)

Canvas	(nominal)
Dark Cottons	(nominal)
Dutch Blues	(nominal)
New Checks and Blues	(nominal)
Old Fustians	(nominal)
Old Linsey Garments	(nominal)
New Silesias	(nominal)

CHICAGO

Waste Paper

(F. o. b. Chicago)

OPA Maximum Prices.

Shavings—			
No. 1 Hard White Envelope Cuts, one cut	3.37½	"	—
No. 1 Hard White Shavings, unruled	2.87½	"	—
No. 1 Soft White Shavings	2.50	"	—
No. 1 White Ledger	2.17½	"	—
No. 1 Heavy Books & Magazines	1.67½	"	—
White Blank News	1.65	"	—
Mixed Kraft Env. & Bag Cuttings	2.75	"	—
No. 1 Assorted Old Kraft	1.75	"	—
Overissue News	.85	"	—
No. 1 News	.75	"	—
No. 1 Mixed Paper	.70	"	—
No. 1 Roofing Rags	1.55	"	—
No. 1 Roofing Bags	1.45	"	—